

No. 8876

United States

Vol
2108

Circuit Court of Appeals

For the Ninth Circuit. *1*

THE PACIFIC MARINE SUPPLY COMPANY
and WEBB PRODUCTS CO., INC.,
Appellants,

vs.

THE A. S. BOYLE COMPANY,
Appellee.

Transcript of Record

Upon Appeal from the District Court of the United States
for the Western District of Washington,
Northern Division.

FILED

AUG 21 1938

PAUL P. O'BRIEN,

CLERK

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[Clerk's Note: When deemed likely to be of an important nature, errors or doubtful matters appearing in the original certified record are printed literally in *italic*; and, likewise, cancelled matter appearing in the original certified record is printed and cancelled herein accordingly. When possible, an omission from the text is indicated by printing in *italic* the two words between which the omission seems to occur.]

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*Page numbering appearing at the foot of page of original certified Transcript of Record.

United States District Court
Western District of Washington

In Equity No. 1035 On Letters Patent No. 1,838,618

THE A. S. BOYLE COMPANY,

Plaintiff,

vs.

THE PACIFIC MARINE SUPPLY COMPANY,

Defendant.

BILL OF COMPLAINT

To the Honorable the Judges of the District Court
of the United States for the Western District
of Washington:

The plaintiff, The A. S. Boyle Company, being a corporation duly organized and existing under the laws of the State of Ohio and having its principal office and place of business at 1934 Dana Avenue in the City of Cincinnati, County of Hamilton, State of Ohio, brings this its Bill of Complaint against The Pacific Marine Supply Company, a corporation of the State of Washington having a regular and established place of business in the City of Seattle, County of King, State of Washington, and committing the acts of infringement hereinafter complained of at said Seattle in the Western District of Washington.

And thereupon the plaintiff complains and says:

1. This is a suit arising under the patent laws of the United States. The defendant has a regular and established place of business within the Western District of Washington and has committed the in-

fringement complained of within said Western District of Washington;

2. Plaintiff is informed and believes that prior to the 17th day of November, 1923, Manfred E. Griffiths, then a subject of the King of Great Britain, and a resident of Stowmarket in the County of Suffolk, England, was the first, original and sole inventor or discoverer of a certain new and useful improvement in [2] *in* Plastic Compositions, not known or used by others in this country before his invention or discovery thereof, and not patented or described in any printed publication in this or any foreign country before his invention or discovery thereof, or more than two years prior to his hereinafter mentioned application for Letters Patent of the United States, and not in public use or on sale in this country for more than two years prior to his application for said Letters Patent in the United States, and which had not been abandoned, nor patented, nor caused to be patented by him or his legal representatives or assigns in any country foreign to the United States on an application filed more than twelve months prior to the filing of his application for Letters Patent of the United States as hereinafter mentioned;

That on November 17, 1923 the said Manfred E. Griffiths duly filed an application for Letters Patent of the United States, Serial No. 675,370 for said invention in accordance with the then existing laws of the United States;

3. That, the said Manfred E. Griffiths and the plaintiff herein having complied in all respects with

the conditions and requirements of the United States Statutes in such cases made and provided, Letters Patent of the United States No. 1,838,618, for said invention were on the 29th day of December 1931 issued and delivered in due form of law to the plaintiff, The A. S. Boyle Company, as assignee by mesne assignments of the said Manfred E. Griffiths, whereby the plaintiff became and now is the exclusive owner of all the right, title and interest in and to the invention covered by the said Letters Patent and in and to said Letters Patent as in and by said Letters Patent or a duly certified copy thereof ready here in court to be produced, and of which profert is hereby made, will fully and at large appear;

4. That the invention as aforesaid is of great utility and [3] value, and that plastic compositions made in accordance with the invention of said Letters Patent have been sold by plaintiff in large and increasing quantities and that the public has recognized the great usefulness and value of said improvement;

5. That the defendant herein, The Pacific Marine Supply Company, has since the grant of said Letters Patent infringed upon the rights of the plaintiff therein, and, particularly upon claims 5, 6, 8, 11, 13, 15, 16, 17 and 18 thereof by using and selling within the Western District of Washington and elsewhere within the United States plastic compositions, for instance, but not exclusively, under the names "Duratite Wood Dough" and "Duratite Seam Putty", embodying the invention of said

Letters Patent No. 1,838,618 and plaintiff is informed and believes that defendant will continue to infringe upon the rights of the plaintiff in said Letters Patent unless prevented by decree of this Court;

6. That the plaintiff has given notice to the public including this defendant that the plastic composition made and sold by it is patented by fixing to the packages in which it is enclosed a label bearing thereon the word "Patent" together with the number "1,838,618", as provided in Section 4900 of the Revised Statutes as amended.

Wherefore plaintiff prays:

(a) For a perpetual injunction restraining the defendants, their clerks, agents, servants and workmen, from infringing said patent; and for a preliminary injunction to a like effect pending this suit;

(b) For an accounting of damages and profits due to said infringement and that the defendants be compelled to pay over to the plaintiff said damages, as well as said profits; and for plaintiff's costs.

(c) For such other relief as equity may require. [‡]

THE A. S. BOYLE COMPANY
By WALTER SILBERSACK

G. WRIGHT ARNOLD
CLINTON L. MATHIS

Solicitors for Plaintiff

GEORGE P. DIKE
CEDRIC W. PORTER

Of Counsel

VERIFICATION

State of Ohio,

County of Hamilton—ss.

Walter Silbersack, being duly sworn, deposes and says, that he is the General Manager of The A. S. Boyle Company, the corporation named in the within entitled action; that he has read the foregoing Bill of Complaint and knows the contents thereof, and that the same is true to his own knowledge, except as to the matters herein stated to be alleged upon information and belief, and as to those matters he believes it to be true; and the reason why this verification is not made by the plaintiff personally is that the said plaintiff is a corporation of which affiant is an officer.

WALTER SILBERSACK

Sworn to before me this 6th day of October, 1933.

[Seal]

CHARLES GALINARI

Notary Public

My Commission expires May 20, 1936.

[Endorsed]: Filed Oct. 13, 1933. [5]

In the United States District Court for the Western
District of Washington

In Equity on Letters Patent No. 1,838,618

THE A. S. BOYLE COMPANY,

Plaintiff,

vs.

THE PACIFIC MARINE SUPPLY COMPANY,

Defendant,

WEBB PRODUCTS CO., INC.,

Intervener.

ANSWER OF THE PACIFIC MARINE
SUPPLY COMPANY

To the Honorable Judges of the District Court of
the United States for the Western District of
Washington:

The Defendant, The Pacific Marine Supply Company, is without knowledge and is not informed save by the Bill of Complaint herein as to whether or not Plaintiff, The A. S. Boyle Company, is a corporation duly organized and existing under the laws of the State of Ohio, having its principal office and place of business at 1934 Dana Avenue, in the City of Cincinnati, County of Hamilton, State of Ohio, and, therefore, leaves Plaintiff to its proofs thereon.

The Defendant, for the purpose of this action admits that it is a corporation of the State of Washington, having a regular and established place of business in the City of Seattle, County of King,

State of Washington, but denies that it is committing any acts of infringement at Seattle, in the Western District of Washington, or elsewhere.

And thereupon, this Defendant, answering the Bill of Complaint, says:

1. The Defendant admits the jurisdiction of this [6] Honorable Court. The defendant also admits that it has a regular and established place of business within the Western District of Washington. Defendant denies that it has committed any acts of infringement either within the Western District of Washington or elsewhere.

2. The Defendant has no information, save by the Bill of Complaint, as to the allegations set forth in paragraph two of the Bill of Complaint and, therefore, denies that prior to the 17th day of November, 1923, or at any other time, that Manfred E. Griffiths was the first, original, and sole inventor or discoverer of any new or useful improvement in plastic compositions; denies that such alleged improvements in plastic composition were not known or used by others in this country before his alleged invention or discovery thereof; denies that said alleged new and useful improvements were not patented or described in any printed publication in this or any foreign country before his invention or discovery thereof, or more than two years prior to his alleged application for letters patent of the United States; denies that said alleged new and useful improvements were not in public use or on sale in this country for more than two years prior

to his alleged application for letters patent of the United States; and denies that said alleged improvements had not been abandoned, nor patented nor caused to be patented by said Manfred E. Griffiths or his legal representatives or assigns in any country foreign to the United States on an application filed more than twelve months prior to the filing of his alleged application for letters patent of the United States.

This Defendant also denies that on or about November 17, 1923, the said Manfred E. Griffiths filed an application for letters patent of the United States and denies that said alleged application was filed in accordance [7] with the then existing laws of the United States.

3. In answering paragraph three of the Bill of Complaint this defendant admits that purported letters patent of the United States, No. 1,838,618, were issued on the 29th day of December, 1931, to The A. S. Boyle Company as assignee by mesne assignments of the said Manfred E. Griffiths, but denies that the said Manfred E. Griffiths and/or the Plaintiff herein complied with the conditions and requirements of the United States statutes in such cases made and provided; Defendant denies that the Plaintiff became and/or now is the exclusive owner of all the right, title and interest in and to the alleged invention covered by the said letters patent and denies that the Plaintiff has become and/or now is the exclusive owner of all the right, title, and interest in and to said letters patent.

4. The Defendant, answering paragraph four of the Bill of Complaint, denies each and every allegation contained in paragraph marked "4."

5. The Defendant, in answer to paragraph five of the Bill of Complaint, admits that it has sold within the Western District of Washington plastic compositions under the names of "Duratite Wood Dough" and "Duratite Seam Putty", but denies that Defendant has infringed upon the rights of the Plaintiff herein and denies that "Duratite Wood Dough" and/or "Duratite Seam Putty" embody the invention of said letters patent No. 1,838,618. The Defendant further denies that it is or that it will continue to infringe upon the rights of the Plaintiff in said letters patent.

6. The Defendant, in answer to paragraph six of the Bill of Complaint is without knowledge or information except by the Bill of Complaint herein and, therefore, denies that the Plaintiff has given notice to the public or to this [8] Defendant that the plastic composition made and sold by Plaintiff is patented either by affixing to the packages in which it is enclosed a label bearing the word "Patented" together with the number "1,838,618", or otherwise.

7. The Defendant denies each and every allegation of infringement or other unlawful act by it in the Bill of Complaint contained.

8. As a first affirmative defense, the defendant, answering on information and belief, alleges that the letters patent in suit are void and of no force and effect because, in view of the state of the art as

known at the time of and long prior to the alleged invention or discovery, the alleged improvements did not involve invention but involved nothing more than the exercise of mere mechanical skill.

9. The Defendant, as a second affirmative defense, answering upon information and belief, alleges that the said letters patent and each of the claims, particularly noted in paragraph five of the Bill of Complaint, are void and of no force and effect because the alleged invention and improvement claimed therein and covered thereby and each and every substantial and material part thereof was, long prior to any invention or discovery thereof by the said Griffiths, patented or described in the following patents and printed publications:

UNITED STATES PATENTS:

Jarvis	329,313	October 27, 1885
Arnold	1,195,431	August 22, 1916
Hinze	1,594,421	August 3, 1926
Deitz and Wayne	133,969	December 17, 1872
Ritschke	1,497,028	June 10, 1924
Ellis	999,490	August 1, 1911
Balke and Leysieffer	1,468,222	September 18, 1923
Dunwoody and Wills	1,187,890	June 20, 1916
Lindsay	1,493,207	May 6, 1924

[9]

Ekstein	458,157	August 25, 1891
Hyatt and Blake	89,582	May 4, 1869
Reagles	311,203	January 27, 1885
Grawl	1,652,353	December 13, 1927
Black	1,294,355	February 11, 1919
Merrick	1,203,229	October 31, 1916
Pierson	65,267	May 28, 1867

BRITISH PATENTS:

Mennens	2,775	November 13, 1860
Bulling	169,177	December 18, 1922
A. De Pont et al	24,790	November 5, 1896
Thompson	27,534	November 23, 1897

GERMAN PATENT:

U. Marga	85,235	1893
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PUBLICATIONS:

“Engineer” dated March 3, 1922, published at 28 Essex Street, Strand, London, W. C. 2, pages 230 and 231.

And others to which the defendant has not now the dates, numbers and patentees thereof, or the names of the publications, titles, and authors identifying the same and which defendant prays leave to furnish when sufficiently informed thereof.

10. As a third affirmative defense defendant avers, on information and belief, that the letters patent in suit are invalid and void in that Manfred Ethelwold Griffiths was not the original or first inventor of the alleged improvements in plastic compositions in that the same plastic compositions and all substantial parts thereof were known to and in public use by the following named persons in the United States prior to the alleged invention by the said Griffiths and more than two years prior to the filing of the alleged application for letters patent: [10] E. S. Webb, now residing at San Bernardino, California; place of knowledge and use: Kelly Field, near San Antonio, Texas. Murray C. Tunison, Elsinore, California; place of knowledge and use: Ala-

meda, California. Joseph J. Graf, Los Angeles, California; place of knowledge and use: Kelly Field, San Antonio, Texas. M. C. Pinnell, Calexico, California; place of knowledge and use: Kelly Field, San Antonio, Texas.

And others to which Defendant has not now the names, addresses, or other data, and which data it prays leave to furnish when sufficiently informed thereof.

Wherefore, The defendant prays that the Bill of Complaint herein be dismissed upon the merits with costs, and that Defendant have such other relief and premises as may be just.

THE PACIFIC MARINE SUPPLY COMPANY

By S. V. BECKWITH

HAZARD & MILLER

FRED H. MILLER

Attorneys for Defendant.

G. E. STEINER

Of Counsel. [11]

[Title of District Court and Cause.]

VERIFICATION.

State of Washington,
County of King.—ss.

S. V. Beckwith, being first duly sworn, deposes and says: that he is Secretary of The Pacific Marine Supply Company, the Defendant in the above entitled action; that he has read the foregoing

answer and knows the contents thereof, and that the same is true of his own knowledge except as to the matters herein stated to be alleged upon information and belief and as to those matters he believes it to be true.

Deponent further says that the reason this verification is made by Deponent and not by the Defendant is because said Defendant is a corporation.

S. V. BECKWITH

Subscribed and sworn to before me this 13 day of Nov. 1933.

[Seal] G. E. STEINER

Notary Public in and for the State of Washington, County of King.

[Endorsed]: Filed Nov. 13, 1933. [12]

[Title of District Court and Cause.]

AMENDMENT TO ANSWER OF DEFENDANT.

IX.

The defendant, as a second affirmative defense, answering upon information and belief, alleges that the said Letters Patent and each of the claims particularly noted in paragraph V of the bill of complaint are void and have no force and effect because the alleged invention and improvement claimed therein and covered thereby and each and every substantial and material part thereof, was, long prior to any invention or discovery thereof by said Griffiths, patented and described in the following patents or printed publications:

UNITED STATES PATENTS:

Jarvis	329,313	October 27, 1885
Arnold	1,195,431	August 22, 1916
Hinze	1,594,521	August 3, 1926
Deitz and Wayne	133,969	December 17, 1872
Ritschke	1,497,028	June 10, 1924
Ellis	999,490	August 1, 1911
Balke et al	1,468,222	September 18, 1923
Dunwoody et al	1,187,890	June 20, 1916
Linsay	1,493,207	May 6, 1924
Eckstein	458,157	August 25, 1891
Hyatt and Blake	89,582	May 4, 1869
Reagles	311,203	January 27, 1885
Graul	1,652,353	December 13, 1927
Black	1,294,355	February 11, 1919
Merrick	1,203,229	October 31, 1916
Pierson	65,267	May 28, 1867

[13]

BRITISH PATENTS:

Mennons	2,775	November 13, 1860
Bulling	169,177	December 18, 1922
A. De Pont	24,790	November 5, 1896
Thompson	27,534	November 23, 1897
Oblasser et al	19,242	October 26, 1892
Meyer	19,735	1908
Oliver	17,001	July 20, 1895
Hermet	6,473	1895
Lengfellner	26,033	July 1, 1909
Balke et al	154,157	March 17, 1922
Koln-Rottweil Aktiengesellschaft	156,095	December 22, 1920

GERMAN PATENTS:

U. Marga	85,235	January 30, 1896
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FRENCH PATENTS:

Matas y Rodes	349,782	December 31, 1904
Charual	463,156	October 2, 1913
Societe Anonyme Nouvelle L'oyonnithe	465,345	November 26, 1913

PUBLICATIONS:

Engineering, dated December 9, 1921, published at 35 and 36 Bedford Street, Strand, London, W. C. 2, England, page 785.

Engineer, dated March 3, 1922, published at 28 Essex Street, Strand, London, W. C. 2, England, pages 230 and 231.

X.

As a third affirmative defense, defendant alleges, on information and belief, that the Letters Patent in suit and particularly those claims thereof noted in paragraph V of the bill of complaint are invalid and void in that Manfred Ethelwold Griffiths was not the first and original inventor of improvements in plastic compositions in that the same plastic compositions and all substantial parts thereof were known to and in public use by the following named persons in the United States prior to the alleged invention by said Griffiths and more than two years prior to the filing of the alleged application for Letters Patent:

E. S. Webb, now residing at San Bernardino, California; place of knowledge and use: Kelly Field, near San [14] Antonio, Texas.

Murray C. Tunison, Elsinore, California; place of knowledge and use: Alameda and Oakland, California.

Joseph J. Graff, Los Angeles, California; place of knowledge and use: Kelly Field, San Antonio, Texas.

M. C. Pinnell, Calexico, California; place of knowledge and use: Kelly Field, San Antonio, Texas.

H. C. Roller, Glendale, California; place of knowledge and use: Glendale, California.

Ted Hoffman, Glendale, California; place of knowledge and use: Chicago, Illinois; also a government flying field in Texas.

Frank J. Bush, Los Angeles, California; place of knowledge and use: Hollywood, California, and Seattle, Washington.

Larry Brown, Los Angeles, California; place of knowledge and use: Los Angeles, California.

XI.

As a fourth affirmative defense, defendant alleges, upon information and belief, that said Letters Patent and particularly the claims thereof as noted in paragraph V of the bill of complaint are invalid and void for the reason that the patentee was not the original, or first, or any inventor thereof, in that the same and all material and substantial parts thereof were invented prior to the alleged invention by the said patentee by:

William G. Linsay, Newark, New Jersey.

William F. Graul, Northhampton, Massachusetts.

Paul Bock and Gustav Leysieffer, Troisdorf, near Cologne, Germany.

Alexander Ritschke, Duneberg, Germany.

Albert Hinze, Parlin, New Jersey. [15]

XII.

Further answering, the defendant, on information and belief, avers that the claims in said Letters Patent are ambiguous and are not distinct and do not particularly point out the part, improvement, or combination which the plaintiff claims as his invention or discovery.

G. E. STEINER

HAZARD & MILLER

Attorneys for Defendant.

[Endorsed]: Filed Jan. 28, 1935. [16]

[Title of District Court and Cause.]

PETITION FOR LEAVE TO INTERVENE.

To the Honorable Judges of the District Court of
the United States for the Western District of
Washington:

The Petitioner, Webb Products Co., Inc., respectfully represents:

1. That the Petitioner, Webb Products Co., Inc., is a corporation duly organized and existing under and by virtue of the laws of the State of California, having its principal office and place of business at 216 South G Street, San Bernardino, in the County of San Bernardino, State of California.

2. That your Petitioner is, and for some years past has been, engaged in the business of manufacturing self-hardening plastic compositions and has been selling these compositions to the trade. That among the plastic compositions that your Petitioner has been manufacturing and selling are compositions made and sold under the names of "Duratite Wood Dough" and "Duratite Seam Putty", mentioned on paragraph five of the Bill of Complaint in the above entitled cause.

3. That your Petitioner is doing a large business, [17] is solvent, and is in good financial standing, and has a high credit rating in the commercial world.

4. That The Pacific Marine Supply Company, the Defendant named in the above entitled cause, is a customer of your Petitioner and has purchased from your Petitioner, as manufacturer, supplies of "Duratite Wood Dough" and "Duratite Seam Putty" for purposes of resale to the trade.

5. That your Petitioner has received a notice from The A. S. Boyle Company, the Plaintiff in the above entitled cause, to the effect that said company was the owner of letters patent No. 1,838,618 and contended that your Petitioner's products were an infringement thereof. That upon receiving such notice your Petitioner respectfully informed The A. S. Boyle Company that it had no intention of discontinuing the manufacture of its products, including such products as "Duratite Wood Dough" and "Duratite Seam Putty", with the hopes and ex-

pectations that if The A. S. Boyle Company, the Plaintiff herein, believed its letters patent No. 1,838,618 to be good and valid in law and the Defendant's products, "Duratite Wood Dough" and "Duratite Seam Putty", were an infringement thereof that The A. S. Boyle Company would institute suit directly against your Petitioner for manufacture, use and sale of said "Duratite Wood Dough" and "Duratite Seam Putty" in the United States District Court in and for the Southern District of California, Central Division.

6. That the Plaintiff herein has threatened and now *are* threatening to commence a multiplicity of actions against other customers of your Petitioner. That representatives of the Plaintiff have represented to many of your Petitioner's customers that your Petitioner's products, "Duratite Wood Dough" and "Duratite Seam Putty" were an infringement of letters patent No. 1,838,618. [18]

7. That the Plaintiff herein has commenced and is continuing a systematic attack upon your Petitioner's business in an attempt to destroy its business by intimidating your Petitioner's customers through threats of prosecution and by other unfair means, and have threatened to continue such assault upon your Petitioner's business.

8. That the Plaintiff, the A. S. Boyle Company, in pursuance of said unlawful scheme has wrongfully, wickedly, and maliciously composed, printed, published, and distributed and caused to be delivered to a large number of your Petitioner's cus-

tomers malicious circulars and advertisements and verbal communications wherein, among other things, it was falsely and maliciously asserted "This announcement is a warning to the trade that the manufacture or sale of any wood base putty containing a nitrocellulose solvent and wood flour or their equivalents is an infringement of this patent. We hereby warn any manufacturer, wholesaler, retailer, or consumer against manufacturing, purchasing, selling or using any compound that infringes this patent," and "Warning!!—We intend to prosecute infringers of the Griffiths patent to the full limit of the law." That such warning was directed to and intended to be directed against your Petitioner and that when such circulars and advertisements were delivered to customers of your Petitioner who were retailing your Petitioner's products they had the effect of intimidating such customers and causing them to solicit assurances from your Petitioner to protect them in the event of patent infringement litigation brought by the Plaintiff herein.

9. That the wrongful acts herein complained of if allowed to continue will destroy the Petitioner's business and cause it irreparable damage and injury for which your Petitioner has no adequate remedy at law. [19]

10. That your Petitioner has been advised by patent counsel that its products do not infringe the said letters patent No. 1,838,618, and that claims 5, 6, 8, 11, 13, 15, 16, 17, and 18, which are relied upon herein, are invalid and void as the subject mat-

ters of said claims were not new or original in view of the prior art.

11. That your Petitioner is directly and vitally interested in the outcome of this suit as it is directed solely against your Petitioner's product as manufacturer thereof.

12. That your Petitioner verily believes that this suit has not been brought in good faith but has been brought to inconvenience your Petitioner and has been brought primarily to influence and intimidate the trade and to cause the trade to refrain from doing business with your Petitioner; that your Petitioner is fully prepared to show to this Honorable Court by competent evidence that its product does not infringe said Letters Patent and that said Letters Patent are invalid and void for various and sundry statutory reasons and that the complaint is wholly without merit, justice or equity.

Wherefore, your Petitioner prays:

1. That it may be permitted to intervene in and become a party defendant to said suit and to file its accompanying answer.

2. That the Plaintiff, its directors, officers, agents, associates, attorneys, clerks, servants, workmen, employees, and confederates, and each of them be enjoined and restrained by a writ of injunction issuing out of and under the seal of this Honorable Court from commencing or prosecuting any further suit or suits against the customers of your Petitioner for infringement of the letters patent in suit pending the determination and outcome of this

suit, and from composing, printing, publishing, mailing, circularizing, [20] communicating, sending, or delivering any letters, circulars, advertisements, or other communications, orally or in writing, wherein there shall be contained directly or indirectly any threat to prosecute anyone on account of dealing with your Petitioner in "Duratite Wood Dough" and "Duratite Seam Putty", or wherein shall be contained any charge directly or indirectly maintaining that your Petitioner's "Duratite Wood Dough" or "Duratite Seam Putty" is an infringement of letters patent in suit pending the determination and outcome of this suit.

3. That your Petitioner may have such other and further relief as to this Honorable Court may seem just and equitable in the premises.

WEBB PRODUCTS CO. INC.,

By E. S. WEBB,

President.

HAZARD & MILLER,

FRED H. MILLER,

Attorneys for Petitioner.

.....,
Of Counsel.

I hereby certify that the foregoing petition is well founded in law.

FRED H. MILLER,

Attorney for Petitioner. [21]

VERIFICATION.

State of California,
County of Los Angeles—ss:

E. S. Webb, being duly sworn, deposes and says: that he is the president of Webb Products Co., Inc., the corporation named in the within entitled petition: that he has read the foregoing petition and knows the contents thereof and that the same is true to his own knowledge except as to matters herein stated to be alleged upon information and belief and as to those matters he believes it to be true.

Deponent further says that the reason this verification is made by deponent and not by the Petitioner is because the said Petitioner is a corporation, and the grounds of deponent's belief as to all matters in said petition not stated upon his own knowledge are investigations which deponent has caused to be made concerning the subject matter of this petition and information acquired by deponent in the course of his duties as an officer of said Webb Products Co., Inc., a corporation, and from the books and papers of said corporation.

Deponent further says that the attached photostatic copy, marked "Exhibit A", is a true and correct photostatic copy of one of the printed circulars which Plaintiff herein, by one of its representatives, has caused to be distributed and delivered to customers of the Petitioner. That the additional photostatic copies attached hereto are true and correct photostatic copies of letters which your Petitioner has received from its customers illus-

trating the results that the acts of the Plaintiff herein have had upon your Petitioner's customers.

E. S. WEBB.

Subscribed and sworn to before me this 7 day of November, 1933.

[Seal]

FREDA R. PAULSON,

Notary Public in and for the State of California,
County of Los Angeles.

[Endorsed]: Filed Nov. 13, 1933. [22]

[Title of District Court and Cause.]

ORDER RELATIVE PETITION OF WEBB
PRODUCTS CO., INC., FOR LEAVE TO
INTERVENE.

This matter came on to be heard in open court at this term and was argued by counsel; and thereupon, upon consideration thereof, it was

Ordered, Adjudged and Decreed as follows:

1. That the petition of the Webb Products Co., Inc. to be made a party defendant as intervener is hereby granted to the extent that said intervention is in subrogation to and in recognition of the main proceeding.

2. That the petition of Webb Products Co., Inc. for an injunction, as set forth in the prayer, paragraph 2, page 4 of the "Petition for Leave to Intervene", is hereby denied.

Dated at Seattle this 19th day of February, 1934.

EDWARD E. CUSHMAN,

United States District Judge.

O. K. as to form.

G. E. STEINER,

Atty. for Webb Products Co.

[Endorsed]: Filed Feb. 19, 1934. [23]

[Title of District Court and Cause.]

ANSWER OF INTERVENER

To the Honorable Judges of the District Court of
the United States for the Western District of
Washington:

The Intervener, Webb Products Co., Inc., for its
answer to the Bill of Complaint, respectfully
alleges:

1. The Intervener is without knowledge and is
not informed save by the Bill of Complaint herein
as to whether or not Plaintiff, The A. S. Boyle
Company, is a corporation duly organized and exist-
ing under the laws of the State of Ohio, having its
principal office and place of business at 1934 Dana
Avenue, in the City of Cincinnati, County of Ham-
ilton, State of Ohio, and, therefore, leaves Plaintiff
to its proofs thereon.

The Intervener, for the purposes of this action,
admits that it is a corporation duly organized and
existing under the laws of the State of California,

having its principal office and place of business at 216 South G Street, San Bernardino, in the County of San Bernardino, State of California.

Thereupon, this Intervener, answering the Bill of Complaint, says: [24]

1. The Intervener admits the jurisdiction of this Honorable Court but denies that it has committed any acts of infringement either within the Western District of Washington or within the State of California, or elsewhere.

2. The Intervener has no information, save by the Bill of Complaint, as to the allegations set forth in paragraph two of the Bill of Complaint, and, therefore, denies that prior to the 17th day of November, 1923, or at any other time, that Manfred E. Griffiths was the first, original, and sole inventor or discoverer of any new or useful improvement in plastic compositions; denies that such alleged improvements in plastic compositions were not known or used by others in this country before his alleged invention or discovery thereof; denies that said alleged new and useful improvements were not patented or described in any printed publication in this or any foreign country before his invention or discovery thereof, or more than two years prior to his alleged application for letters patent of the United States; denies that said alleged new and useful improvements were not in public use or on sale in this country for more than two years prior to his alleged application for letters patent of the United States; and denies that said

alleged improvements had not been abandoned, nor patented nor caused to be patented by said Manfred E. Griffiths or his legal representatives or assigns in any country foreign to the United States on an application filed more than twelve months prior to the filing of his alleged application for letters patent of the United States.

This Intervener also denies that on or about November 17, 1923, the said Manfred E. Griffiths filed an application for letters patent of the United States and denies that said alleged application was filed in accordance with the then existing laws of the United States. [25]

3. In answering paragraph three of the Bill of Complaint this Intervener admits that purported letters patent of the United States, No. 1,838,618, were issued on the 29th day of December, 1931, to The A. S. Boyle Company as assignee by mesne assignments of the said Manfred E. Griffiths, but denies that the said Manfred E. Griffiths and/or the plaintiff herein complied with the conditions and requirements of the United States statutes in such cases made and provided; Intervener denies that the Plaintiff became and/or now is the exclusive owner of all the right, title and interest in and to the alleged invention covered by the said letters patent and denies that the Plaintiff has become and/or now is the exclusive owner of all the right, title, and interest in and to said letters patent.

4. The Intervener, answering paragraph four of

the Bill of Complaint is without knowledge of the allegations made in this paragraph and, therefore, denies each and every allegation contained in paragraph marked "4." leaving the Plaintiff to strict proof thereon.

5. The Intervener, in answer to paragraph five of the Bill of Complaint, admits that it is manufacturing, using, and selling plastic compositions under the names of "Duratite Wood Dough" and "Duratite Seam Putty" but denies that it has infringed upon the rights of the Plaintiff herein since the grant of Plaintiff's letters patent or at any other time, and denies that "Duratite Wood Dough" and/or "Duratite Seam Putty" embody the invention of letters patent No. 1,838,618. The Intervener further denies that it has or will continue to infringe upon the rights of the Plaintiff in said letters patent.

6. The Intervener, in answer to paragraph 6 of the Bill of Complaint, is without knowledge or information except by the Bill of Complaint herein and, therefore, denies [26] that the Plaintiff has given notice to the public that the plastic composition made and sold by Plaintiff is patented by affixing to the packages in which it is enclosed a label bearing thereon the word "Patented" together with the number "1,838,618". The Intervener admits, for the purposes of this action, that the Intervener has received written notice from the Plaintiff herein directing attention to Plaintiff's patent No. 1,838,618.

7. The Intervener denies each and every allegation of infringement or other unlawful action alleged in the Bill of Complaint which may be applied to this Intervener as Intervener.

8. As a first affirmative defense, the Intervener, answering on information and belief, alleges that the letters patent in suit are void and of no force and effect because, in view of the state of the art as known at the time of and long prior to the alleged invention or discovery, the alleged improvements did not involve invention but involved nothing more than the exercise of mere mechanical skill.

9. The Intervener, as a second affirmative defense, answering upon information and belief, alleges that the said letters patent and each of the claims, particularly noted in paragraph five of the Bill of Complaint, are void and of no force and effect because the alleged invention and improvement claimed therein and covered thereby and each and every substantial and material part thereof was, long prior to any invention or discovery thereof by the said Griffiths, patented or described in the following patents and printed publications:

UNITED STATES PATENTS:

Jarvis	329,313	October 27, 1885
Arnold	1,195,431	August 22, 1916
Hinze	1,594,421	August 3, 1926
Deitz and Wayne	133,969	December 17, 1872

Ritschke	1,497,028	June 10, 1924
Ellis	999,490	August 1, 1911
Balke and Leysieffer	1,468,222	September 18, 1923
Dunwoody and Wills	1,187,890	June 20, 1916
Lindsay	1,493,207	May 6, 1924
Ekstein	458,157	August 25, 1891
Hyatt and Blake	89,582	• May 4, 1869
Reagles	311,203	January 27, 1885
Grawl	1,652,353	December 13, 1927
Black	1,294,355	February 11, 1919
Merrick	1,203,229	October 31, 1916
Pierson	65,267	May 28, 1867

BRITISH PATENTS:

Mennens	2,775	November 13, 1860
Bulling	169,177	December 18, 1922
A. De Pont et al	24,790	November 5, 1896
Thompson	27,534	November 23, 1897

GERMAN PATENT:

U. Marga	85,235	1893
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PUBLICATIONS:

“Engineer” dated March 3, 1922, published at 28 Essex Street, Strand, London, W. C. 2, pages 230 and 231.

And others to which the Intervener has not now the dates, numbers and patentees thereof, or the names of the publications, titles, and authors identifying the same and which defendant prays leave to furnish when sufficiently informed thereof.

10. As a third affirmative defense Intervener avers, on information and belief, that the letters

patent in suit are invalid and void in that Manfred Ethelwold Griffiths was not the original or first inventor of the alleged improvements in plastic compositions in that the same plastic compo- [28] sitions and all substantial parts thereof were known to and in public use by the following named persons in the United States prior to the alleged invention by the said Griffiths and more than two years prior to the filing of the alleged application for letters patent:

E. S. Webb, now residing at San Bernardino, California; place of knowledge and use: Kelly Field, near San Antonio, Texas.

Murray C. Tunison, Elsinore, California; place of knowledge and use: Alameda, California.

Joseph J. Graf, Los Angeles, California; place of knowledge and use: Kelly Field, San Antonio, Texas.

M. C. Pinnell, Calexico, California; place of knowledge and use: Kelly Field, San Antonio, Texas.

And others to which Intervener has not now the names, addresses, or other data, and which data it prays leave to furnish when sufficiently informed thereof.

Wherefore, the Intervener prays that the Bill of Complaint herein be dismissed upon the merits with

costs, and that Intervener have such other relief and premises as may be just.

WEBB PRODUCTS CO., INC.
By E.S. WEBB
President.

HAZARD & MILLER
FRED H. MILLER
Attorneys for Intervener.

G. E. STEINER
Of Counsel. [29]

[Title of District Court and Cause.]

VERIFICATION

State of California,
County of Los Angeles—ss:

E. S. Webb, being first duly sworn, deposes and says: that he is president of Webb Products Co., Inc., the Intervener in the above entitled action; that he has read the foregoing answer and knows the contents thereof, and that the same is true to his own knowledge except as to the matters herein stated to be alleged upon information and belief and as to those matters he believes it to be true.

Deponent further says that the reason this verification is made by Deponent and not by the Intervener is because said Intervener is a corporation.

E. S. WEBB

Subscribed and sworn to before me this 7th day of November, 1933.

[Seal] FRED A. PAULSON
Notary Public in and for the State of California,
County of Los Angeles.

[Endorsed]: Filed Nov. 13, 1933. [30]

[Title of District Court and Cause.]

AMENDMENT TO ANSWER OF
INTERVENER

IX.

The intervener, as a second affirmative defense, answering upon information and belief, alleges that the said Letters Patent and each of the claims particularly noted in paragraph V of the bill of complaint are void and have no force and effect because the alleged invention and improvement claimed therein and covered thereby and each and every substantial and material part thereof was, long prior to any invention or discovery thereof by said Griffiths, patented and described in the following patents or printed publications:

UNITED STATES PATENTS:

Jarvis	329,313	October 27, 1885
Arnold	1,195,431	August 22, 1916
Hinze	1,594,521	August 3, 1926
Deitz and Wayne	133,969	December 17, 1872
Ritschke	1,497,028	June 10, 1924
Ellis	999,490	August 1, 1911
Balke et al	1,468,222	September 18, 1923
Dunwody et al	1,187,890	June 20, 1916
Linsay	1,493,207	May 6, 1924
Eckstein	458,157	August 25, 1891
Hyatt and Blake	89,582	May 4, 1869
Reagles	311,203	January 27, 1885
Graul	1,652,353	December 13, 1927
Black	1,294,355	February 11, 1919
Merriek	1,203,229	October 31, 1916
Pierson	65,267	May 28, 1867

BRITISH PATENTS:

Mennons	2,775	November 13, 1860
Bulling	169,177	December 18, 1922
A. De Pont	24,790	November 5, 1896
Thompson	27,534	November 23, 1897
Oblasser et al	19,242	October 26, 1892
Meyer	19,735	1908
Oliver	17,001	July 20, 1895
Hermet	6,473	1895
Lengfellner	26,033	July 1, 1909
Balke et al	154,157	March 17, 1922
Koln-Rottweil Aktiengesellschaft	156,095	December 22, 1920

GERMAN PATENTS:

U. Marga	85,235	January 30, 1896
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FRENCH PATENTS:

Matas y Rodes	349,782	December 31, 1904
Charual	463,156	October 2, 1913
Societe Anonyme Nouvelle L'onoynnithe	465,345	November 26, 1913

PUBLICATIONS:

Engineering, dated December 9, 1921, published at 35 and 36 Bedford Street, Strand, London, W. C. 2, England, page 785.

Engineer, dated March 3, 1922, published at 28 Essex Street, Strand, London, W. C. 2, England, pages 230 and 231.

X.

As a third affirmative defense, intervener alleges, on information and belief, that the Letters Patent in suit and particularly those claims thereof noted in paragraph V of the bill of complaint are invalid

and void in that Manfred Ethelwold Griffiths was not the first and original inventor of improvements in plastic compositions in that the same plastic compositions and all substantial parts thereof were known to and in public use by the following named persons in the United States prior to the alleged invention by said Griffiths and more than two years prior to the filing of the alleged application for Letters Patent:

E. S. Webb, now residing at San Bernardino, California; place of knowledge and use: Kelly Field, near San Antonio, Texas. [32]

Murray C. Tunison, Elsinore, California; place of knowledge and use: Alameda and Oakland, California.

Joseph J. Graff, Los Angeles, California; place of knowledge and use: Kelly Field, San Antonio, Texas.

M. C. Pinnell, Calexico, California; place of knowledge and use: Kelly Field, San Antonio, Texas.

H. C. Roller, Glendale, California; place of knowledge and use: Glendale, California.

Ted Hoffman, Glendale, California; place of knowledge and use: Chicago, Illinois; also a government flying field in Texas.

Frank J. Bush, Los Angeles, California; place of knowledge and use: Hollywood, California, and Seattle, Washington.

Larry Brown, Los Angeles, California; place of knowledge and use: Los Angeles, California.

XI.

As a fourth affirmative defense, intervener alleges, upon information and belief, that said Letters Patent and particularly the claims thereof as noted in paragraph V of the bill of complaint are invalid and void for the reason that the patentee was not the original, or first, or any inventor thereof, in that the same and all material and substantial parts thereof were invented prior to the alleged invention by the said patentee by:

William G. Linsay, Newark, New Jersey.

William F. Graul, Northampton, Massachusetts.

Paul Bock and Gustav Leysieffer, Troisdorf, near Cologne, Germany.

Alexander Ritschke, Duneberg, Germany.

Albert Hinze, Parlin, New Jersey. [33]

XII.

Further answering, the intervener, on information and belief, avers that the claims in said Letters Patent are ambiguous and are not distinct and do not particularly point out the part, improvement, or combination which the plaintiff claims as his invention or discovery.

HAZARD & MILLER

G. E. STEINER

Attorneys for Intervener.

[Endorsed]: Filed Jan. 28, 1935. [34]

[Title of District Court and Cause.]

MOTION FOR ORDER REQUIRING INTERVENER TO ANSWER INTERROGATORIES AND FURNISH FURTHER AND BETTER PARTICULARS.

Comes now the Plaintiff, A. S. Boyle Company, by and through its attorneys of record and moves the Court for an Order:

I.

Directing that the Intervener, Webb Products Co., Inc. answer Plaintiff's reframed interrogatories 1 to 6, inclusive, or in the alternative and in lieu of answering said interrogatories 1 to 6, inclusive, answer Plaintiff's interrogatories 7 to 9, inclusive.

II.

Directing that the Intervener, Webb Products Co., Inc. within thirty (30) days from the date hereof, file a statement as to the approximate dates of any prior use alleged by it in its answer, a description of the thing or things, its ingredients and where—if at all—any such composition so used can now be found and inspected. If the Intervener has no knowledge concerning any of these required particulars, its statement to such effect will be sufficient excuse for not furnishing such particular or particulars.

G. WRIGHT ARNOLD

CLINTON L. MATHIS

Solicitors for Plaintiff

Seattle, Washington, November 5, 1934.

[Endorsed]: Filed Nov. 5, 1934. [35]

[Title of District Court and Cause.]

ORDER ON PLAINTIFF'S MOTION REQUIRING INTERVENER TO ANSWER INTERROGATORIES AND TO FURNISH FURTHER AND BETTER PARTICULARS.

It is hereby ordered by the Court that E. S. Webb, President of Webb Products Co., Inc., Intervener, is required to answer, under oath, Plaintiff's reframed interrogatories numbered 1 to 5, inclusive, or at the Intervener's option in lieu of answering said reframed Interrogatories 1 to 5, Intervener may answer interrogatories numbered 7 & 8. Said E. S. Webb is required to answer said interrogatories as aforesaid, unless some other officer of said Intervener corporation has better knowledge of the facts as to any particular interrogatory, in which case, such other officer is required to make answer thereto under oath.

It is further ordered by the Court that the Intervener be required within thirty days from the date hereof to file a statement as to the approximate dates of any prior use alleged by it in its answer, a description of the thing or things, its ingredients and where—if at all—any such composition so used can now be found and inspected. If the Intervener has no knowledge concerning any of these required particulars, its statement to such effect will be sufficient excuse for not furnishing [36] such particular or particulars.

Dated at Tacoma this 19th day of Nov., 1934.

EDWARD E. CUSHMAN

United States District Judge.

Defendant excepts to the foregoing order requiring of it such bill of particulars and its exception is allowed.

EDWARD E. CUSHMAN

Dist. Judge.

Presented by Plaintiff.

G. WRIGHT ARNOLD

CLINTON L. MATHIS.

[Endorsed]: Filed Nov. 19, 1934. [37]

[Title of District Court and Cause.]

INTERROGATORIES TO DEFENDANT
UNDER EQUITY RULE 58.

Now Comes the plaintiff, by its attorneys and in pursuance of Equity Rule 58, and by Order of the Court entered herein, requires the defendant, The Pacific Marine Supply Company, by its Secretary, S. V. Beckwith, or such other officer as may have better knowledge of the facts, to answer on or before Dec. 19, 1933 the following interrogatories for the discovery of facts material to the support of plaintiff's cause; objections, if any, to be filed on or before.

1. Do the compositions of matter used and sold by the defendant since December 29, 1931, and prior to the filing of the Bill of Complaint herein under

the name of "Duratite Wood Dough" and "Duratite Seam Putty" contain nitrocellulose? If so, state the percentage by weight in each composition.

[38]

2. Do the compositions of matter used and sold by the defendant since December 29, 1931, and prior to the filing of the Bill of Complaint herein under the name of "Duratite Wood Dough" and "Duratite Seam Putty" contain a volatile liquid? If so, give the commercial designation of said volatile liquid and the percentage by weight in each composition.

3. Do the compositions of matter used and sold by the defendant since December 29, 1931, and prior to the filing of the Bill of Complaint herein under the name of "Duratite Wood Dough" and "Duratite Seam Putty" contain a non-drying oil? If so, give the description and commercial designation of said non-drying oil and the percentage thereof by weight of each composition.

4. Do the compositions of matter used and sold by the defendant since December 29, 1931, and prior to the filing of the Bill of Complaint herein under the name of "Duratite Wood Dough" and "Duratite Seam Putty" contain a resinous matter? If so, give the description and commercial designation of said resinous matter and the percentage by weight in each composition.

5. What is the description and commercial designation of the filler contained in the compositions of matter sold by the defendant under the name

“Duratite Wood Dough” and “Duratite Seam Putty”? What is the percentage by weight of said filler in each composition?

6. What is the description and commercial designation of the inorganic material contained in the compositions of matter sold by the defendant under the name of “Duratite Wood Dough” and “Duratite Seam Putty”? What is the percentage by weight of said inorganic material in each composition? [39]

If defendant prefers, the following interrogatories may be answered in place of the foregoing:

7.

Does the following analysis state correctly the ingredients and percentage of the compositions of matter used or sold by defendant under the name of “Duratite Wood Dough” since December 29, 1931, and prior to the filing of the Bill of Complaint herein? If not correct, state the correct analysis:

“DURATITE WOOD DOUGH”

	Percentage by weight
Solvent	34. Acetone 27.3%) Methyl)34% Alcohol 5.1%) Camphor 1.6%)
Nitrocellulose	8.
Resins and non-drying oil	5.
Filler	22.
Inorganic Material	30.

8.

Does the following analysis state correctly the ingredients and percentage of the compositions of matter used or sold by defendant under the name of "Duratite Seam Putty" since December 29, 1931, and prior to the filing of the Bill of Complaint herein? If not correct, state the correct analysis.

"DURATITE SEAM PUTTY"

	Percentage by Weight
Solvent	44. Acetone .4%)
	Methyl)
	Alcohol 16.3%)
	Ethyl)
	Alcohol 5.2%) 44%
	Butyl)
	Acetate .4%)
	Butyl)
	Alcohol 14.1%)
	Toluene 7.5%)
Nitrocellulose	12.
Resins and non-drying oil	10.
Filler	19.
Inorganic Material	14.

[40]

9. State the commercial description of each of the ingredients contained in the compositions of matter used or sold by the defendant since December 29, 1931, and prior to the filing of the Bill of

Complaint herein under the name "Duratite Wood Dough" and "Duratite Seam Putty".

S. V. Beckwith, Secretary of The Pacific Marine Supply Company, is required to answer under oath all of the above interrogatories numbered 1 to 6 inclusive, or alternatively numbers 7 to 9 unless some other officer of the defendant corporation has better knowledge of the facts as to any particular interrogatory, in which case such other officer is required to make answer thereto under oath.

(Sgd.) G. WRIGHT ARNOLD,
GEORGE P. DIKE,
CLINTON L. MATHIS
Solicitors for Plaintiff

MACLEOD, CALVER, COPELAND & DIKE
Seattle, Wash.
Boston, Mass.
Nov. 27, 1933.

[Endorsed]: Filed Nov. 27, 1933. [41]

ORDER

It is hereby Ordered by the Court that plaintiff have leave to file the interrogatories hereto annexed to be answered on or before Dec. 26, 1933, as provided by Equity rule #58 by the defendant, by its Secretary, S. V. Beckwith, or such other officer

thereof as may have better knowledge of the facts; unless duly objected to on or before Dec. 18, 1933.

Nov. 29, 1933.

JEREMIAH NETERER

United States District Judge

O. K.

G. E. STEINER

Atty for Deft.

O. K.

G. WRIGHT ARNOLD

Atty for Plaintiff.

[Endorsed]: Filed Nov. 29, 1933. [42]

[Title of District Court and Cause.]

ANSWERS TO INTERROGATORIES BY
INTERVENER

Now Comes the Intervener, Webb Products Co., Inc., and in answer to the interrogatories propounded herein by plaintiff, elects to answer interrogatories 7 and 8, interrogatory 9 not being required to be answered.

7.

The answer to interrogatory 7 is "No." The correct analysis of Duratite Wood Dough is as follows:

solvents	41% by weight
nitrocellulose	10.5% by weight
gums and oils	5.7% by weight
filler	11.5% by weight
inorganic materials	31.3% by weight

8.

The answer to interrogatory 8 is "No." The correct analysis of Duratite Seam Putty is as follows:

	Colored	White
Solvent	42.5%	40%
nitrocellulose	16.4%	15.3%
gums and oils	19.8%	18.3%
filler	10.7%	10%
inorganic materials	10.6%	16.7%

C. S. CORKHAM [43]

County of San Bernardino
State of California—ss:

C. S. Corkham, being first duly sworn, deposes and says that he is secretary-treasurer of Webb Products Co., Inc., the intervener in the above-entitled answer; that the foregoing answers to interrogatories 7 and 8 are true to the best of affiant's knowledge and belief.

C. S. CORKHAM

Subscribed and sworn to before me this 23rd day of Jan., 1935.

[Seal]

FREDA R. PAULSON

Notary Public in and for the County of Los Angeles, State of California.

[Endorsed]: Filed Jan. 28, 1935. [44]

[Title of District Court and Cause.]

PARTICULARS OF INTERVENER

Now Comes the Intervener and files a statement in compliance with the memorandum ruling upon plaintiff's motion for further and better particulars as to prior uses alleged by it in its answer.

E. S. Webb in 1918 and 1919, at Kelly Field, Texas, made a composition consisting of "wing dope" (nitrocellulose dissolved into solvent) mixed with wood sandings. This composition was used to fill small depressions in airplane propeller tips. No samples of such composition are now available to be found and inspected insofar as the intervener is aware.

Murray C. Tunison made a composition at Oakland, California, during the year 1914, of film and celluloid scrap dissolved in a solvent acetone and mixed with wood meal. This was used for various types of repairs. No samples which can be inspected are now available insofar as the intervener is aware.

Joseph J. Graff and M. C. Pinnell, both indulged in the same practices with and without small variations from that previously described in connection with E. S. Webb, at [45] the same time and place. No samples are now available insofar as the intervener is aware.

H. C. Roller, now in Glendale, California, made a composition in 1914 including nitrocellulose, a solvent, and finely divided wood. This was used to re-

pair wood generally. A sample of this composition is available and may be inspected at the H. C. Roller Laboratories, Orange Street, Glendale, California.

Ted Hoffman, now located c/o Lockheed Aircraft Company, Glendale, California, made a composition including wing dope and finely divided wood and used the same in 1918 at the Great Lakes Training Station, Chicago, Illinois. This was used to repair depressions in wood and in air plane propellers. No samples are available at the present time of which intervener is aware.

Frank J. Bush, now associated with the General Electric Company of Los Angeles, engaged in a similar practice to that above described in connection with E. S. Webb during 1918 and 1919 at Kelly Field, Texas. No sample is now available as far as intervener is aware.

Edwin Frazee made compositions including nitro-cellulose dissolved in a solvent mixed with finely divided wood and castor oil in 1914 and years following in Hollywood, California, and Seattle, Washington. The composition was used to mold small figures in moving picture work. No samples of the material are now available of which intervener is aware, but pictures of figures made of the composition are available and may be inspected at the place of business of Edwin Frazee on Sunset Boulevard, Hollywood, California.

Larry Brown, now connected with Monasco Motors, Los Angeles, California, in 1912 and years following, in Los Angeles, California, made compo-

sitions including nitro- [46] cellulose dissolved with a solvent and mixed with finely divided wood with and without a plasticizer. No samples of this composition are now available insofar as intervener is aware.

HAZARD & MILLER

Attorneys for Intervener.

Copy received this 28th day of January, 1935.

G. WRIGHT ARNOLD

By E. BAUER.

[Endorsed]: Filed Jan. 28, 1935. [47]

[Title of District Court and Cause.]

PARTICULARS OF DEFENDANT

Defendant has no knowledge concerning the required particulars as required in the memorandum ruling upon plaintiff's motion for further and better particulars but, instead, has relied upon the intervener to actively conduct the defense of this cause on defendant's behalf and, therefore, adopts those particulars set up by the intervener herein.

(Signed) S. V. BECKWITH

Secretary, The Pacific Marine
Supply Company.

(Signed) G. E. STEINER

Of Counsel for defendant.

[Endorsed]: Filed Jan. 28, 1935. [48]

[Title of District Court and Cause.]

ANSWERS TO INTERROGATORIES BY THE
DEFENDANT

Now Comes S. V. Beckwith, Secretary of The Pacific Marine Supply Company, and in answer to the interrogatories propounded herein by plaintiff, states:

S. V. Beckwith does not know the exact nature of the compositions sold to The Pacific Marine Supply Company by the intervener, Webb Products Co., Inc., under the name of "Duratite Wood Dough" and "Duratite Seam Putty", and does not believe that any other person connected with the defendant corporation is any better informed as to the nature of these compositions than S. V. Beckwith. Not knowing the nature of these compositions, S. V. Beckwith is unable to answer any of the interrogatories propounded and, therefore, adopts as answers to the interrogatories propounded the answers made to the same interrogatories by Intervener, Webb Products Co., Inc.

S. V. BECKWITH

State of Washington

County of.....—ss:

S. V. Beckwith, being first duly sworn, deposes and says that he is secretary of The Pacific Marine Supply Company; that the foregoing statement is true to the best of affiant's knowledge and belief.

S. V. BECKWITH

Subscribed and sworn to before me the 28th day of Jany. 1935.

[Seal] G. E. STEINER

Notary Public in and for the State of Washington,
County of.....

[Endorsed]: Filed Jan. 28, 1935. [49]

[Title of District Court and Cause.]

ORDER FOR ISSUANCE OF COMMISSION

This cause coming on to be heard on the petition of plaintiff for a Dedimum potestatem to take the testimony of Manfred E. Griffiths and Ernest Caizley Murray, material witnesses for the plaintiff residing at Stowmarket, Suffolk, England, and other witnesses, both parties being represented by counsel, it is the opinion of the Court that the petition should be granted and it is hereby

Ordered that a commission issue in this cause out of this Court directed to Edwin Courtney Walker or Joseph Phillips Crawley, notaries public and commissioners for oaths, at 53 and 54 Chancery Lane, London, W. C. 2, England, authorizing him to take the deposition of Manfred E. Griffiths of Stowmarket, Suffolk, England and of Ernest Caizley Murray of Stowmarket, Suffolk, England, and other witnesses, at London, upon the interrogatories and cross-interrogatories to be attached hereto, as prayed for in said petition. [50]

It is further ordered that due notice of the time and place of said examination be given to counsel of both parties.

Either party to this action shall have the liberty not only to examine the witnesses herein named but any other witnesses that either party may have, at the place aforesaid, provided that the names and places of residence of said witnesses shall be given to the attorney of the opposit side five days before such examination.

It is further ordered that the testimony given under such examination shall be reduced to writing, signed by the witnesses, certified by the said Commissioner, and returned by him by mail to the Clerk of this court at the City of Seattle, Washington, U. S. A.

It is further ordered that all testimony taken under this commission provided for herein shall be taken subject to all legal objections at the trial of this action.

EDWARD E. CUSHMAN

U. S. D. J.

Dated: 1935.

[Endorsed]: Filed Nov. 11, 1935. [51]

[Title of District Court and Cause.]

COMMISSION TO TAKE TESTIMONY

In the District Court of the United States for the Western District of Washington:

The President of the United States of America to Edwin Courtney Walker or Joseph Phillips Crawley, Greeting:

Know ye, that we, by these presents, have appointed you a Commissioner and do give you full power and authority to examine Manfred E. Griffiths and Ernest Caizley Murray, of stowmarket, Suffolk, England, and other witnesses, under oath, as witnesses on behalf of the plaintiff in a certain cause now pending in the above court, wherein The A. S. Boyle Company is Plaintiff and The Pacific Marine Supply Company is defendant, on the interrogatories and cross interrogatories hereto attached.

And we do further empower you on the same behalf and in like manner to conduct an oral examination of any other person or persons who may be produced as witnesses before you.

And we do hereby require you, before whom such testimony is to be taken, to reduce the same to writing, and to close it up under your hand and seal and direct it to the Clerk of the above entitled court at Seattle, in the Western District of Washington, [52] U. S. A. as soon as may be after the execution of this commission; that you return the same when executed, as above directed, with the title of the

cause endorsed upon the envelope of the commission.

Witness the Honorable Edward E. Cushman,
Judge of the District Court of the United States
this 6th day of May, 1935.

[Seal]

EDGAR M. LAKIN,

Clerk

By TRUMAN EGGER

Deputy Clerk [53]

[Title of District Court and Cause.]

MEMORANDUM DECISION AFTER TRIAL.

G. WRIGHT ARNOLD and
CLINTON L. MATHIS,

1608 Smith Tower, Seattle, Wn.,

Solicitors for Plaintiff.

GEORGE P. DIKE and

C. W. PORTER, of Macleod, Calver, Copeland &
Dike,

73 Tremont St., Boston, Massachusetts,

Of Counsel for Plaintiff.

C. E. STEINER,

304 Spring St., Seattle, Wn., and

HAZARD & MILLER, Central Bldg., Los Angeles,
Calif.,

Attorneys for Defendant and Intervener.

This suit is one for infringement of Claims 5, 6,
8, 11, 13, 15, 16, 17 and 18 of Patent No. 1,838,618,

issued to Manfred Ethelwold Griffiths December 29, 1931 upon an application filed November 17, 1923. The infringement alleged is the using and selling by defendant of certain compositions under the names of "Duratite Wood Dough" and "Duratite Seam Putty".

The defendant, in its Answer, admits the sale of such compositions but denies infringement and alleges the invalidity of the patent as not involving invention, in view of the state of the art. [54]

Defendant further alleges invalidity because of anticipation by various United States, British and French patents, a German patent and various publications.

Invalidity is also alleged in that the compositions covered by the claims and all substantial parts thereof were known and in public use in the United States prior to the alleged invention and more than two years prior to the filing of the application for the letters patent.

The intervener admits the manufacture and sale of the alleged infringing compositions, denies infringement and alleges invalidity of the patent, as does the defendant.

Plaintiff Cites: American Stainless Steel Co. v. Ludlum Steel Co., 290 F. 103; Badische Anilin & Soda Fabrik v. Klipstein & Co., 125 F. R. 543; Bankers' Utilities Co. Inc. et al v. Pacific Nat. Bank et al., 18 F. (2d) 16; Barbed Wire Patent.

143 U. S. 275; *Brammer v. Schroder*, 106 F. 918; *Butler v. Burch Plow Co.*, 23 F. (2d) 15; *Carson v. American Smelting & Refining Co.*, 4 F. (2d) 463; *Claude Neon Lights Inc. v. Rainbow Light*, 47 F. (2d) 345; *Cohn v. United States Corset Co.*, 93 U. S. 367; *Diamond Rubber Co. v. Consolidated Rubber Tire Co.*, 220 U. S. 428; *Eibel Process Co. v. Minnesota & Ontario Paper Co.*, 261 U. S. 45; *Expanded Metal Co. v. Bradford*, 214 U. S. 366; *General Electric Co. v. Alexander Co.*, 277 Fed. 290; *General Electric Co. v. P. R. Mallory Co.*, 294 F. 562; *Goodwin Film & Camera Co. v. Eastman Kodak Co.*, 207 Fed. 351; *Gottschalk Mfg. Co. v. Springfield Wire & Tinsel Co.*, [55] 74 F. (2d) 583; *Grosselin Ex Parte*, 1901 Comm. Dec. 248; *Gulf Smokeless Coal Co. v. Sutton, Steel & Steel et al.*, 35 F. (2d) 433; *Hanifen v. E. H. Godschalk*, 78 F. 811; *Hanifen v. Price*, 96 F. 441; *Hildreth v. Mastoras*, 257 U. S. 27; *Hoskins Mfg. Co. v. General Electric Co.*, 212 F. 422; *J. A. Mohr & Son v. Alliance Securities Co.*, 14 F. (2d) 799; *Kings County Resin & Fruit Co. v. United States Consolidated Seeded Raisin Co.*, 182 F. 59; *Kurtz v. Belle Hat Lining Co.*, 280 Fed. 277; *National Battery Co. v. Richardson*, 63 F. (2d) 289; *O'Rourke Eng. Con. Co. v. McMullen*, 160 F. 933; *Pittsburgh Plate Glass Co. v. American Window Glass Co.*, 276 F. 197; *Proctor & Gamble Co. v. Berlin Mills Co.*, 256 F. 23; *Root Refining Co. v. Universal Oil Products Co.*, 78 F. (2d) 991; *Salt's Textile Mfg. Co. v. Tingue Mfg. Co.*, 227 F. 115; *Sandusky v. Brooklyn*

Box Toe Co., 13 F. (2d) 238; Seymour v. Osborne, 78 U. S. 516; Smith v. Goodyear Dental Vulcanite Co., 93 U. S. 486; Temco Electric Motor Co. v. Apoo Mfg. Co., 275 U. S. 319; Trane Co. v. Nash Engineering Co., 25 F. (2d) 267; Trico Products Corp. v. Ace Products Corp., 30 F. (2d) 688; Trussell Mfg. Co. v. Wilson-Jones Co., 50 F. (2d) 1027; Wellman-Seaver Morgan Co. v. William Cramp & Sons Ship & Engine Bldg. Co., 3 F. (2d) 531; Welsbach Light Co. v. American Incandescent Lamp Co., 98 F. 616; Westinghouse Elec. & Mfg. Co. v. Wadsworth Elec. Mfg. Co., 36 F. (2d) 319; Young Radiator Co. v. Modine Mfg. Co., 55 F. (2d) 545; Corpus Juris, 48. Sec. 96; Walker on Patents, 6th Edition, Sec. 109, p. 136; Title 35, U. S. C. A., Sec. 31; Railroad Supply Co. v. Hart Steel Co., 222 Fed. 261; Hobbs v. Beach, 180 U. S. 392, 393; United States Metallic Co. v. Howitt Co., 236 Fed. 739; De Laski & [56] Thropp C. W. Tire Company v. United States Tire Company, 232 Fed. 684, 888; Individual Drinking Cup Co. v. United States Drinking Cup Co., 220 Fed. 331; Keasbey & Mattison Co. v. Philip Carey Mfg. Co., 139 Fed. 571; Canada v. Michigan Malleable Iron Co., 124 Fed. 486; Skelly Oil Co. v. Universal Oil Products Co., 31 Fed. (2d) 427; Shimadzu v. Electric Storage Battery Co., 17 F. Supp. 42-49; A. S. Boyle Co. v. Harris-Thomas Co., et al., 18 F. Supp. 177.

Defendant and Intervener cite: Abercrombie & Fitch vs. Baldwin, 245 U. S. 198; Amdur Patent Law and Practice, page 384, Section 9; American

Stainless Steel Corp. vs. Rustless Iron Corp., 2 F. Supp. 742; American Sulphite Pulp Co. vs. Holland Falls Pulp Co., 80 Fed. Rep. 398; In re Bayer, 35 Fed. (2d) 66; Browning vs. Colorado Telephone Co., 61 Fed. 845, 847; Celluloid Mfg. Co. vs. Crofut and others, 24 Fed. 796; Claude Neon Lights, Inc. vs. Rainbow Light, 47 Fed. (2d) 345; Corona Cord Tire Co. vs. Donan Chemical Corp., 276 U. S. 358; Deller, "Patent Law for Chemical and Metallurgical Industries"; Diamond Rubber Co. vs. Consolidated Rubber Tire Co., 220 U. S. 428; Doyle vs. Spaulding et al., 19 Fed. 744; 745; Emery vs. G. C. Murphy Co., 4 Fed. Supp. 575; Eskimo Pie Corp. vs. Honeymoon Pie, 25 Fed. (2d) 154-156; Eskimo Pie Corp. vs. Levous et al., 35 Fed. (2d) 120, 122; Expanded Metal Co. vs. Bradford, 214 U. S. 366; Gaylor vs. Wilder, 51 U. S. 477, 496; Ex parte Grosselin, 1901 C. D. 248; Harris vs. Stern & Lotz, 22 App. D. C. 164; Hemming, "Plastics and Molded Electrical Insulation"; Howe Machine Co. vs. National Needle Co., 134 U. S. 388, 397; McClain vs. Ortmyer, 141 U. S. 419; Meccano, Ltd. vs. John Wanamaker, 253 U. S. 136; Mettler vs. [57] Peabody Engineering Co. et al., 77 Fed. (2d) 56; Monitor Stove Co. vs. Williamson Heater Co., 282 Fed. 910; National Battery vs. Richardson Company, 63 Fed. (2d) 289; Page Steel & Wire Co. vs. The Smith Bros. Hardware Co., 64 Fed. (2d) 512; Railroad Supply Co. vs. Elyria Iron Co., 244 U. S. 285; In re Reed, 81 Fed. (2d) 869; Roemer vs. Simon, 95 U. S. 214; Ex parte Schwarz, 25 U. S. Pat. Q.

257; *Serenac Automatic Machine Co. vs. Wirebound Patents Co.*, 282 U. S. 704; *F. R. Stearns Co. vs. Russell*, 85 Fed. 218, 226; *Sewell vs. Jones*, 91 U. S. 171; *Shaw vs. Cooper*, 7 Peters 292, 8 L. Ed. 689; *Thomas vs. Reese*, 1880 C. D. 12, 17; *Tripplett vs. Lowell, et al.*, 297 U. S. 638; *U. S. Scaffolding Co. vs. Chain Belt Co.*, 254 U. S. 32; *Walker on Patents*, 6th Ed. page 115; *Wendell vs. American Laundry Machine Co.*, 239 Fed. 555, 557; *Westinghouse Machine Co. et al. vs. General Electric Co.*, 207 Fed. 75, 77; *Wilson & Dick vs. Scherts & Hamill*, 81 Fed. (2d) 755; *Westinghouse vs. Boyden*, 170 U. S. 537; *Ex parte Whitelaw*, 219 O. G. 1237, 1915 C. D. 18; *Zenithern Co. vs. Art Marble Co.*, 56 Fed. (2d) 39; *Patent Office Rule 75*; *Mast Foos Co. vs. Stover Mfg. Co.*, 177 U. S. 485, 488; 44 L. Ed. 856; *Walker on Patents*, Sixth Ed. page 327; *Naylor vs. Alsop Process Co.*, 168 Fed. 911, 917; *Loom Co. vs. Higgins*, 105 U. S. 580, 591; *Yablick v. Protecto Safety Appliance Corp.*, 21 Fed. (2d) 885; *Donner vs. Sheer Pharmacal Corp.*, 64 Fed. (2d) 217.

Cushman, District Judge:

In addition to testimony heard upon the trial the deposition of Leslie Soule, on behalf of the [58] plaintiff was taken, to which deposition defendant and intervener objected, as not being taken within the time limit specified in the Order of the Court of March 11, 1935.

The deposition was taken in June, 1935. The trial of the cause was not begun until May, 1936. It in no

way appearing that defendant or intervener was taken by surprise, no adjournment or continuance being asked and opportunity for cross examination on behalf of defendant and intervener being afforded and exercised, the objection to the deposition is overruled.

Depositions of the patentee, Manfred Ethelwold Griffiths and Ernest Caizley Murray were also taken on behalf of plaintiff, which depositions the defendant and intervener have moved to strike from the record upon the grounds that public use of an invention in a foreign country more than two years before filing an application for patent in this country, operates as an abandonment of the invention and that under the statute (Sections 4886, 4887 and 4923, Revised Statutes, Title 35, U. S. C. A., Sections 31, 32 and 72) and Patent Office Rule No. 75, invention by patentee in a foreign country more than two years prior to the date of filing application for letters patent in the United States may not be shown in support of validity and that plaintiff may not assert any date of invention earlier than an actual or constructive reduction to practice in the United States or importation into the United States of plastic wood, the composition covered by the claims of his patent.

The motion to strike these depositions is denied.

The defense of prior knowledge and public use in [59] the United States of the composition covered by the invention has not been established.

Claim 6 of the patent is as follows:

“6. A doughy putty-like plastic composition comprising nitrocellulose in a solution containing a volatile liquid *and a finely divided cellulose filler* in such proportions as to harden upon mere exposure to air to substantially the rigidity and solidity of wood, *said filler being present in not less than fifteen parts by weight.*” (Emphasis, the Court’s)

Claim 11 also contains the words of Claim 6 emphasized by the Court.

Claim 15 specifies a “finely divided wood filler” and specifies “said wood filler being present in not less than fifteen parts by weight.”

Claim 18 specifies “about 15 to about 30 percent by weight of finely divided wood”.

The evidence has shown that the alleged infringing composition sold by defendant and manufactured by intervener contains substantially less of the filler described in these claims than fifteen parts by weight.

Infringement by neither defendant nor intervener, insofar as these claims are concerned, has been shown. It is therefore unnecessary to determine the validity of these claims.

Application for the patent was filed November 17, 1923. Defendant and intervener allege “Engineering”, published December 9th, 1921 in London, England, as an anticipation. The article in this publication shown to have been prepared upon information given by the patentee of the patent in suit describes the material of the invention as follows:

“It is a collodion preparation made with very fine wood meal, and as supplied ready for [60] use is of the consistency of soft putty, and of much the colour of deal.”

If it be conceded that this description was sufficient to teach one of ordinary skill in the plastic art the composition covered by the remaining claims of the patent, yet, having been published less than two years prior to the filing of the application for patent and the evidence having shown that Griffiths' invention was prior to the date of the publication, anticipation in this respect has not been established.

Concerning the *remain* claims—which are broader claims—the defense most positively asserted is that of invalidity as a result of anticipation. Concerning infringement of these claims defendant and intervener state:

“On the question of infringement it must be conceded that such claims as are not limited to more than fifteen parts by weight of cellulose or wood filler are readable on the defendant's and intervener's composition. It is freely conceded that the defendant's composition contains nitrocellulose, a solvent therefor, and wood flour.”

The patent was issued after consideration by the patent office, its Board of Appeals and the Supreme Court of the District of Columbia and all of the claims here in suit have been held valid by the District Court in the District of Massachusetts (A. S.

Boyle Co. v. Harris-Thomas Co. et al., 18 F. Supp. 177) and are quoted in the opinion of that Court.

If any of the disclosures plead by the defendant or intervener as anticipating claims 5, 8, 13, 16 or 17 describe the composition covered by any of these claims in such full, clear terms as to enable a person reasonably skilled in the art of plastics to prepare the composition therein described, it has not been so [61] shown as to overcome the presumption of validity attending the issue of the patent after the contest waged in the Patent Office and the Supreme Court of the District of Columbia, such decision by the District Court of the District of Massachusetts and that which the evidence in the present case has shown of commercial success and numerous imitations of the composition covered by these broader claims, which matters show invention in respect to these claims, which showing has in no way been overcome by the defendant and intervener. The Court holds these claims to be valid and to have been infringed by defendant and intervener.

Any findings of fact, conclusions of law, decree or other orders, if any, embodying the foregoing rulings or resulting therefrom, will be settled upon notice.

The Clerk is directed to notify the attorneys for the parties of the filing of this decision.

[Endorsed]: Filed Sep. 25, 1937. [62]

[Title of District Court and Cause.]

ORDER DENYING PETITION FOR
REHEARING

The defendant and intervener petition the Court for a rehearing of this case, the main ground being anticipation of the patent in suit, the Griffiths patent No. 1,838,618, by the Pierson patent, No. 65267, which latter patent, it is asserted, was not considered by the Patent Office in its issue of the patent in suit, nor by the courts upholding its validity.

Clearly, while the Pierson patent may narrow the scope of certain of the claims of the Griffiths patent, it does not anticipate the claims upheld by this Court. For one thing, the claims and specifications of the Pierson patent do not disclose the "doughy, putty-like" or "dough-like and putty-like" characteristics of the composition of the claims of the Griffiths patent.

The petition for rehearing is denied.

The Clerk is directed to notify the attorneys for the parties of this Order.

Signed at Tacoma, Washington, this 7th day of January, 1938.

EDWARD E. CUSHMAN
District Judge.

[Endorsed]: Filed Jan. 7, 1938. [63]

[Title of District Court and Cause.]

EXCEPTIONS OF DEFENDANT AND INTER-
VENOR AND ORDER ALLOWING SAME.

The Court having heretofore on the 7th day of January, 1938 entered an Order denying the Petitions for Rehearing by the Defendant and Intervenor.

The Defendant and Intervenor by and through their counsel of record hereby except to the entrance of said Order and request that their exceptions be noted and allowed.

Dated at Seattle, this 1st day of February, 1938.

HAZARD & MILLER

G. E. STEINER

Counsel for Defendant and
Intervenor.

ORDER NOTING EXCEPTIONS AND
ALLOWING SAME

The above exceptions of the defendant and intervenor to the Order of the Court denying the Petitions for Rehearing are hereby noted and exceptions are allowed in favor of said Defendant and said Intervenor.

Dated at Tacoma, this 1 day of Feb., 1938.

EDWARD E. CUSHMAN

United States District Judge

[Endorsed]: Filed Feb. 1, 1938. [64]

[Title of District Court and Cause.]

AMENDED PROPOSED FINDINGS OF FACT
OF THE A. S. BOYLE COMPANY

Comes now the A. S. Boyle Company, plaintiff, and in accordance with the statement of the Court on page 9 of its Memorandum Decision, filed September 25, 1937, requests the Court to make the following special findings of fact:

1. The Court hereby adopts its Memorandum Decision or opinion filed September 25, 1937 as its special findings of fact herein, together with the hereinafter additional special findings of fact.

2. The Court finds that the plaintiff is a corporation duly organized and existing under the laws of the State of Ohio.

3. The Court finds that the defendant, The Pacific Marine Supply Company, is a corporation duly organized and existing under the laws of the State of Washington, and has a regular and established place of business within the Western District of Washington, and has committed the acts of infringement hereinafter found in the Western District of Washington. [65]

4. The Court finds that the Intervener, Webb Products Co., Inc., is a corporation duly organized and existing under and by virtue of the laws of the State of California. That said Intervener filed its Petition to Intervene November 13, 1933 and was made a party hereto by Order of this Court.

5. The Court finds that Letters Patent of the United States No. 1,838,618, dated December 29,

1931 to Manfred Ethelwold Griffiths for "Plastic Compositions" is good and valid in law as to claims 5, 8, 13, 16 and 17.

6. The Court finds that the Plaintiff, the A. S. Boyle Company is the lawful owner of said Letters Patent No. 1,838,618.

7. The Court finds that the defendant, The Pacific Marine Supply Company, has infringed upon said claims 5, 8, 13, 16 and 17 of said Letters Patent No. 1,838,618 by the sale of a plastic composition known as "Duratite Wood Dough", and the intervener has infringed upon said claims of said patent by the manufacture of said plastic composition known as "Duratite Wood Dough".

8. The Court finds that the plaintiff has given notice to the public, including the defendant and intervener herein, that the plastic composition made and sold by the plaintiff under the Letters Patent in suit is patented by affixing to the packages, in which the said product of the plaintiff is enclosed, a label bearing thereon the word "Patent", together with the number "1,838,618" as provided in Section 4900 of the Revised Statute of the United States as amended.

9. That the essential ingredients of Griffiths' composition of matter are nitrocellulose, volatile solvent and a cellulose filler. That this composition is a doughy-plastic mass [66] which can be handled like putty and molded or shaped as desired, and after exposure to the air, becomes hard and wood-

like, and in this condition may be sawn, drilled and otherwise treated like wood, but with the advantage that, unlike wood it will not splinter, split or crack.

10. That it is used for industrial purposes such as repairing defects in wood products of many kinds, for filling in irregularities and to cover joints and holes.

11. That it is extensively used by carpenters and by repairmen, and is used in the home and by the general public for repairing dented, rotted or worn devices and can be used in connection with wood, metal or practically any substance providing a clean surface.

12. That the Griffiths composition has replaced other substances in many fields. For example, it is used in place of wooden plugs to cover nail-and screw-heads in boat-building. It has replaced putty in the mending and in the construction of furniture.

13. That in many instances this composition is unique. For the first time lumber manufacturers have a material by which knots and blemishes in large quantities can be filled, making it possible to avoid the losses normally due to inferior and rejected lumber. For the first time carpenters have a means of adding on wood as well as taking it off. For the first time there is a suitable material for altering and repairing patternmaker's patterns and core boxes, for repairing carved school desks, for altering shoe lasts, for filling dents in automobile fenders and bodies. In each of these cases and in

many others, the Griffiths' composition did something which could not be done by any previously known material. [67]

14. That the Griffiths composition has met with commercial success, over two and one half million dollars' worth being sold in a period of eleven years to a public which at first had no conception of its uses and a healthy scepticism of its practicality.

15. That no comparable material has been in public use in the United States prior to the introduction of this material to the market under the Griffiths patent. It was the first real plastic wood known.

16. That as many as nineteen infringers have discontinued upon notification.

17. That there was no knowledge or public use of the invention of the Griffiths patent in the United States before the introduction by the patentee Griffiths.

18. The alleged prior art does not disclose either the material here involved or a conception of the invention or the purposes here accomplished. That none of the alleged prior art discloses a composition of matter capable of use, without modification amounting to complete reorganization, for the purposes for which the Griffiths composition has been used and that such modifications would not have been made without the exercise of the inventive faculty.

19. That the defendant and many others have since the filing of the Griffiths application November 17, 1923, placed upon the market imitations of and substitutes for the Griffiths composition of matter, all of which contain the three essential ingredients; nitrocellulose, volatile solvent and cellulose filler.

Respectfully submitted,

.....
Solicitor for the Plaintiff.

Feb. 1st, 1938, at Tacoma, Wash. The foregoing findings approved and hereby made the findings of the Court.

EDWARD E. CUSHMAN,
Judge.

[Endorsed]: Lodged Nov. 23, 1937.

[Endorsed]: Filed Feb. 1, 1938. [68]

[Title of District Court and Cause.]

PROPOSED CONCLUSIONS OF LAW OF
THE A. S. BOYLE COMPANY

Comes now the A. S. Boyle Company, plaintiff, and in accordance with the statement of the Court on page 9 of its Memorandum Decision, filed September 25, 1937, requests the Court to make the following special conclusions of law:

1. The Court hereby adopts its Memorandum opinion or Decision filed September 25, 1937 as its special conclusions of law herein, together with the hereinafter additional special conclusions of law.

2. The Court concludes that United States Letters Patent No. 1,838,618, dated December 29, 1931 to Manfred Ethelwold Griffiths for "Plastic Compositions" as to claims 5, 8, 13, 16 and 17 is good and valid in law and has been infringed by the defendant, Pacific Marine Supply Company and the intervener, Webb Products Co., Inc.

3. The Court concludes that the plaintiff is entitled to the profits, gains and advantages which the defendant, intervener and each derived, received or made since December 29, 1931 by reason of their infringement of said claims of said Letters Patent, and in addition to the profits which the defendant and intervener [69] have each received and made, plaintiff is entitled to such other damages as plaintiff has suffered by reason of said infringement.

4. The Court concludes that plaintiff is entitled to the usual perpetual injunction directed to said defendant and intervener and their respective agents, restraining and enjoining them from infringing said Letters Patent in any way whatsoever.

5. The Court concludes that the plaintiff is entitled to its costs and disbursements in this suit to be taxed.

Dated at Tacoma, this 1st day of Feb., 1938.

The foregoing Conclusions of law approved and made the Conclusions of the Court.

EDWARD E. CUSHMAN

United States District Judge.

Presented by the A. S. Boyle Company, Plaintiff.

G. WRIGHT ARNOLD

GEORGE P. DIKE

CLINTON L. MATHIS

Attorneys for Plaintiff.

[Endorsed]: Lodged Nov. 24, 1937.

[Endorsed]: Filed Feb. 1, 1938. [70]

[Title of District Court and Cause.]

DEFENDANT'S AND INTERVENER'S PROPOSED FINDINGS OF FACT AND CONCLUSIONS OF LAW.

Now come the defendant and intervener and propose the following findings of fact and conclusions of law.

1.

The essential ingredients of the Griffiths composition are nitrocellulose, a volatile solvent, and a finely-divided cellulose filler (Esselen, Rep. Tr. p. 33). Claims 5 and 17 recite no other ingredients than these three. The proportions of these ingredients are not critical and for this reason these claims recite no proportions whatsoever, and are to be interpreted as being broader than Griffiths

claim 18 which restricts the filler content to between 15% and 30%.

2.

Plastic compositions composed of nitrocellulose, a volatile solvent, and cellulose filler were old and well-known long prior to Griffiths' date of invention. An example of this is to be found in the Pierson patent, defendant's Exhibit A7. [71] This is admitted by the plaintiff's expert Esselen, who testified, Rep. Tr. p. 302, ll. 9 to 14:

"Q. Well, you do find in the Pierson patent, don't you, a composition composed of nitro-cellulose in a solution containing a volatile liquid and a finely-divided cellulose filler?"

"A. Yes, * * *."

3.

The Pierson composition is stated to be "useful for statuary and moldings" which compares favorably with the Griffiths purpose stated to be "for filling, coating or moulding," (p. 1, ll. 4 and 5). The percentage of filler in Pierson, as described by him, may vary from 10% to 64%. In Griffiths the preferred percentage of filler is from 15% to 30% (p. 1, ll. 58, 59). Claims 5 and 17 of the Griffiths patent, however, being interpreted broader than claim 18, are not restricted to any particular proportions.

The plaintiff in marketing its products under the Griffiths patent adopts no particular consistency but uses consistencies in cans which differ from those in tubes (Rep. Tr. p. 275, ll. 25 et seq). The plaintiff

also puts on the market cans of solvent for use with its products wherein the user may and is expected to vary the consistency of the product at will (Rep. Tr. p. 273, line 15 to p. 275, line 2).

4.

Claims 5 and 17 are invalid as failing to define any novelty over what is admitted to be disclosed in the Pierson patent. These claims fail in the language of Revised Statute 4888 to "particularly point out and distinctly claim" any distinguishing feature over Pierson. [72]

5.

Claims 5 and 17 likewise fail to distinguish from the composition disclosed in the Oblasser patent, defendant's Exhibit A10. This is admitted by the plaintiff's expert Esselen who testified, Rep. Tr. p. 303, ll. 8 to 17:

"Q. And how about this Oblasser patent? Do you find in that patent wherein he makes up a composition, an agglomerate, don't you find presented there a composition of nitro-cellulose in a solution containing a volatile liquid and a finely-divided cellulose filler?

"A. Yes, but again with no proportions given and no suggestions as to the consistency of the mixture.

"Q. He says that could be used for moulding. That gives you some idea of the consistency, doesn't it?

"A. Yes."

6.

The plaintiff cannot complain about the lack of disclosure of definite proportions in the Oblasser or other patents relied upon by the defendant and intervener (a) because claims 5 and 17 of the Griffiths patent are not restricted to any definite proportions; (b) because there is nothing critical about the proportions as is demonstrated by the plaintiff's compositions in tubes being different from the plaintiff's compositions in cans and by the sales by plaintiff of cans of solvent for use in its compositions; (c) the plaintiff itself has represented to the trade that its patent covers all proportions of nitrocellulose solvent and cellulose filler in the following language

“any wood base putty containing nitrocellulose solvent and wood flour or their equivalents is an infringement of this patent.” (See defendant's Exhibit A2.) [73]

7.

Claims 8, 13, and 16 of the Griffiths patent differ from his claims 5 and 17 in immaterial, non-essential, and optional details, to wit, (a) the presence of a non-drying or castor oil; (b) the presence of a resinous body recited in claims 13 and 16; (c) the specification that the volatile solvent shall be acetone and not some other volatile solvent such as alcohol and ether.

8.

The use of oil in a composition of nitrocellulose is suggested by the Pierson patent wherein it is

stated "oil may often be added to advantage." Plaintiff's expert Esselen testified that the function of the castor oil was (Rep. Tr. p. 34, ll. 18 to 20):

"Q. What is the effect of the non-drying oil?

"A. The non-drying oil adds to the toughness of the composition."

Also, on page 292, ll. 17 to 19, he testified:

"Q. What is the effect of castor oil?

"A. It adds flexibility, a permanent flexibility to a compound which is made from nitro-cellulose."

9.

The addition of castor oil to compositions of nitrocellulose solvent, and finely-divided cellulose filler such as are admittedly disclosed in the Pierson and Oblasser patents to accomplish the function of reducing brittleness and increasing flexibility or toughness is not a patentable improvement but would have occurred to anyone familiar with these compositions during the years 1915, 1916, and 1917. This is admitted by the plaintiff's expert Esselen, Rep. Tr. [74] p. 64, ll. 1 to 14:

"Q. Do you believe that it would be obvious to anyone that was familiar with nitro-cellulose plastic compositions that if you wished to increase the flexibility and resiliency of the dried mass and to increase the adhesiveness that all they would have to do would be to add some castor oil and ester gum?

"A. Yes.

“Q. You believe that was true as of 1918?

“A. Yes.

Q. In fact, during 1915, 1916 and 1917 castor oil was a well-known ingredient to use in nitro-cellulose plastic compositions to ameliorate the brittleness of the composition, wasn't it?

“A. Yes.”

If any further proof was necessary reference may be had to the Parks patent No. 2675, defendant's Exhibit A 28, who states, page 3, lines 34 et seq.

“The gun cotton compound if used alone would however become too hard and brittle to be usefully employed for many purposes, to avoid this I knead with it in a mixing machine castor oil, or it may be other similar oil, such as cotton seed oil, and this I use in proportions varying according to the degree of toughness and flexibility I desire to obtain.”

The introduction of castor oil as specified in claims 8 to 13, and 16 to accomplish its expected function cannot impart patentability to these claims. [75]

10.

The addition of the optional ingredient, to wit., a resinous body or ester gum as recited in such claims as 13 and 16 cannot impart patentability to these claims. The function of the resinous body or ester gum is stated by plaintiff's expert Esselen to be (Rep. Tr. p. 34, ll. 22 to 23):

“A. The ester gum adds to the property of adhesiveness, to make it stick.”

The Oblasser patent, defendant's Exhibit A10 suggests the use of resins, page 2, line 55. Furthermore, plaintiff's expert testified, Rep. Tr. p. 64, ll. 15 to 20:

“Q. And gum, including ester gum, was also a well-known ingredient in nitro-cellulose compositions as a means of increasing the cohesiveness and the adhesiveness of the mass, as of those year (1915, 1916, and 1917). Isn't that true?”

“A. Well, adhesiveness, yes * * *”

The addition of ester gum to the Pierson and Oblasser compositions of nitrocellulose, volatile solvent and cellulose filler to increase the adhesiveness thus was well within the realm of mechanical skill prior to Griffiths' date of invention in 1919.

11.

The recitation in claim 13 that the volatile solvent shall be acetone and not alcohol and ether cannot impart patentability to this claim. This is the mere substitution of one well-known solvent for another. The plaintiff's expert Esselen concedes that prior to 1919 acetone was well recognized as a solvent in place of alcohol and ether. He testified, Rep. Tr. p. 64, ll. 21 to 23:

“Q. Do you know whether acetone was a well-recognized [76] solvent in place of ether

and alcohol, as of those years (1915, 1916, and 1917).

“A. As to those years, yes it was.”

12.

The conclusion is that claims 5 and 17 of the Griffiths patent are admittedly anticipated by the Pierson and Oblasser patents. Claims 8, 13, and 16 differ from claims 5 and 17 in optional, immaterial ingredients, the functions of which were well known in nitrocellulose compositions of this character long prior to Griffiths' date of invention. These claims are, therefore, invalid.

13.

The plaintiff by its attorney having withdrawn Duratite Seam Putty from issue in his opening statement, page 13, ll. 4 to 9, and having offered no evidence as to the nature of Duratite Seam Putty, the Bill of Complaint should be dismissed as against this composition.

14.

Although plaintiff knew that the defendant, The Pacific Marine Supply Company, was selling a product of the intervener, Webb Products Co. Inc., and that defendant, The Pacific Marine Supply Company was not manufacturing any infringing composition of its own, Rep. Tr. p. 118, ll. 21 to 29, and although the plaintiff had communicated with the intervener prior to the institution of this suit, Rep. Tr. p. 117 and Exhibits A3 and A4, see also Rep. Tr. p. 228, ll. 6 to 13, the plaintiff elected to

sue the defendant rather than the intervener, thus placing the intervener at a great inconvenience to defend this suit. [77]

15.

The plaintiff has distributed to the trade around fifty thousand books containing warnings to the effect that any wood base putty containing nitro-cellulose solvent and wood flour or their equivalents was an infringement, Rep. Tr. p. 115, ll. 17 and 18. In addition to this, the plaintiff has distributed reprints of these warnings similar to defendants Exhibit A2, Rep. Tr. p. 115, ll. 19 to 21.

While nineteen concerns have agreed to discontinue manufacturing products alleged to infringe the plaintiff's patent, Rep. Tr. p. 104, l. 16 to p. 105, l. 7, around a dozen or a dozen and a half concerns are putting out competing products and are still putting these out regardless of the plaintiff's patent, Tr. p. 120, ll. 2 to 10. This demonstrates that the plaintiff's patent has been disregarded almost as much as it has been respected regardless of the fact that over fifty thousand warnings have been distributed among the trade.

16.

The plaintiff's sales rise and fall in direct proportion with the plaintiff's advertising, Rep. Tr. p. 119, ll. 15 to 29. See also the graph of sales with respect to advertising in the brief for the defendant and intervener. The plaintiff has advertised in

such publications as the Saturday Evening Post, Collier's, Liberty, and American Cookery, Rep. Tr. p. 119, ll. 6 to 10. The plaintiff's commercial success is largely due to its advertising ability and to its distribution of warnings against patent infringers. [78]

17.

While the plaintiff and the trade have developed a number of new uses for this composition, none of which are described in the plaintiff's patent, the Pierson and Oblasser compositions being made of the same ingredients and having the same general consistency, must necessarily be susceptible of the same uses. That the Pierson and Oblasser compositions are susceptible of similar use is demonstrated by defendant's Exhibits A34 to A45, inclusive, and A59. The Pierson and Oblasser compositions being the same as that of the plaintiff's patent, particularly as defined by claims 5 and 17 must necessarily have the same characteristics as the Griffiths composition. The plaintiff in exploiting the Griffiths patent has merely obtained a patent on a composition described in the Pierson and Oblasser patents and by skillful advertising and the adoption of a catchy trade-name, to wit, "Plastic Wood" succeeded in marketing this composition.

18.

Neither the Pierson nor the Oblasser patents were placed in evidence nor made of record in the Griffiths application while the same was pending

before the Examiner and the Board of Appeals in the Patent Office, nor were these patents placed in evidence before the Supreme Court of the District of Columbia. Had the Pierson or Oblasser patents been placed in evidence before the Supreme Court of the District of Columbia, claims 5, 8, 13, 16 and 17 would not have been logically awarded to Griffiths for the reason that they fail to patentably differ from the prior art. [79]

19.

The intervener has not undertaken to market merely an imitation of the plaintiff's product or to market a composition as described in the Griffiths patent, but instead has undertaken to market a product having a relatively high percentage of inert filler in addition to wood flour with the result that the shrinkage that creates shrinkage cracks in Plastic Wood is materially reduced, Rep. Tr. p. 231, ll. 14 to 27, and the fire hazard present in Plastic Wood is materially reduced, Rep. Tr. p. 232, ll. 4 to 9.

20.

It is concluded as a matter of law that claims 5 and 17 of the Griffiths patent No. 1,838,618 are invalid as failing to define any novelty whatsoever over what is admittedly disclosed in the Pierson and Oblasser patents. It is also concluded that claims 8, 13, and 16 are invalid for the reason that these claims, by reciting the presence of a non-drying or castor oil, the presence of a resinous body or ester gum and that the solvent employed shall

be acetone, differ from the prior art in non-essential, immaterial, and unpatentable details which are admittedly well within the realm of mechanical skill and were obvious to anyone engaged in this line of endeavor prior to Griffiths' effective date of invention.

Respectfully submitted,
G. E. STEINER
HAZARD & MILLER
FRED H. MILLER

Counsel for Defendant and Intervener

[Endorsed]: Filed Nov. 1, 1937. [80]

[Title of District Court and Cause.]

ORDER

The Defendant and Intervener's proposed Findings of Fact and Conclusions of Law having been presented to the Court and having been read to and considered by the Court, Defendant and Intervener's proposed Findings of Fact numbered 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 14, 15, 16, 17, 18, and 19 and Defendant and Intervener's proposed Conclusion of law numbered 20 are hereby denied.

As to Defendant and Intervener's proposed Finding of Fact number 18 the Court has separated said Finding into two paragraphs designated 18a and 18b, 18a being the first sentence of said Finding 18 and 18b being the second sentence of said Finding 18. Defendant and Intervener's proposed Finding of Fact numbered 18b is hereby denied.

Defendant and Intervener's proposed Findings of Fact numbered 13 and 18a are hereby allowed.

Dated at Tacoma, Washington, this 1st day of Feb. 1938.

EDWARD E. CUSHMAN

District Judge.

[Endorsed]: Filed Feb. 1, 1938. [81]

[Title of District Court and Cause.]

EXCEPTIONS OF DEFENDANT AND
INTERVENER

The Court having heretofore, on the 1st day of February, 1938, entered an Order denying the defendant and intervener's proposed Findings of Fact numbered 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 14, 15, 16, 17, 18, 18b, 19 and denying defendant and intervener's proposed conclusion of law number 20.

The Defendant and Intervener, by and through their Counsel of record, hereby except to the entrance of said Order and request that their exceptions be noted and allowed.

Dated at Tacoma, Washington, this 1st day of Feb. 1938.

HAZARD & MILLER & G. E. STEINER

Counsel for Defendant and Intervener.

ORDER NOTING EXCEPTIONS AND
ALLOWING SAME

The above exceptions of Defendant and Intervener to the Court's Order disallowing and deny-

ing the defendant and intervener's proposed Findings of Fact numbered 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 14, 15, 16, 17, 18, 18b, and 19 and proposed Conclusion number 20, are hereby noted and said exceptions allowed said defendant and intervener.

Dated at Tacoma, Washington, this 1st day of February, 1938.

EDWARD E. CUSHMAN

District Judge

[Endorsed]: Filed Feb. 1, 1938. [82]

United States District Court, Western District of
Washington, Northern Division

In Equity No. 1035

Letters Patent No. 1,838,618

THE A. S. BOYLE COMPANY,

Plaintiff,

vs.

THE PACIFIC MARINE SUPPLY COMPANY,

Defendant

WEBB PRODUCTS CO., INC.,

Intervener

AMENDED INTERLOCUTORY DECREE

This cause having come on to be heard upon pleadings and after trial in open court, and having considered the arguments and briefs of the respective parties, it is

Ordered, Adjudged and Decreed:

1. That Letters Patent of the United States No. 1,838,618, dated December 29, 1931, to Manfred Ethelwold Griffiths, for Plastic Compositions, is good and valid in law as to claims 5, 8, 13, 16 and 17.

2. That the plaintiff, The A. S. Boyle Company, is the lawful owner of said Letters Patent No. 1,838,618.

3. That the defendant, The Pacific Marine Supply Company, has infringed upon said claims 5, 8, 13, 16 and 17 of said Letters Patent No. 1,838,618 by the sale of a Plastic composition known as "Duratite Wood Dough" and the intervener has infringed upon said claims of said patent by the manufacture of said plastic composition known as "Duratite Wood Dough". [83]

4. That the plaintiff recover of the defendant and the intervener the profits, gains and advantages which said defendant and intervener have each derived, received or made since December 29, 1931 by reason of their infringement of claims 5, 8, 13, 16 and 17 of said Letters Patent No. 1,838,618, and in addition to the profits which the defendant and intervener have each received or made, such other damages as the plaintiff has suffered by reason of said infringement.

5. That the case be referred to a Master to be hereafter named to ascertain and state and to report to the Court on account of the said gains, profits and advantages which the defendant, The Pacific Marine Supply Company, and the intervener, Webb

Products Co., Inc., have each received or made from said infringement, and to ascertain and report the damages, if any, which the plaintiff has sustained by reason thereof, in addition to the profits which the defendant, The Pacific Marine Supply Company, and the intervener, Webb Products Co., Inc., have each received or made, or which have accrued to said defendant and intervener since December 29, 1931, and that said Master shall report the same to this Court with all convenient speed.

6. That a perpetual injunction issue out of and under the seal of this Court directed to The Pacific Marine Supply Company and the Webb Products Co., Inc., their directors, officers, associates, attorneys, clerks, agents, employees and confederates, and each of them, enjoining and restraining them and each of them until further ordered by this Court, from directly or indirectly making or causing to be made, selling or causing to be sold, or threatening to make, use or sell, or [84] in any way using or profiting from the making, using and/or selling, the said plastic composition known as "Duratite Wood Dough", made in accordance with the inventions, improvements and discoveries of claims 5, 8, 13, 16 and 17 of said Letters Patent No. 1,838,618, or in any wise infringing said Letters Patent, and from contributing to the infringement of said Letters Patent by others or conspiring with others to infringe the said Letters Patent in any way whatsoever.

7. That the plaintiff recover from the defendant, The Pacific Marine Supply Company, and the intervener, Webb Products Co., Inc., its costs of this suit to be taxed.

Tacoma, Washington
Feb. 1st, 1938.

EDWARD E. CUSHMAN

United States District Judge

Approved as to form:

.....
Attorneys for Defendant
and Intervener

.....
For Plaintiff

[Endorsed]: Lodged Nov. 23, 1937.

[Endorsed]: Filed Feb. 1, 1938. [85]

—————
[Title of District Court and Cause.]

EXCEPTIONS OF DEFENDANT AND
INTERVENER

The Court having heretofore entered an Order allowing the proposed Findings of Fact of Plaintiff numbered 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, and 19 and having further entered an Order allowing Plaintiff's proposed Conclusions of Law numbered 1, 2, 3, 4, and 5 and the Court further having entered the Amended Interlocutory Decree including paragraphs 1, 2, 3, 4, 5, 6, and 7,

Defendant and Intervener, by and through their counsel of record, hereby except to the allowance of each of said Findings of Fact and each of said Conclusions of Law and each of said paragraphs of said Interlocutory Decree and request that their exceptions be noted and allowed.

Dated at Tacoma, Washington, this 1st day of Feb. 1938.

HAZARD & MILLER and G. E. STEINER
Counsel for Defendant and Intervener.

ORDER NOTING EXCEPTIONS AND
ALLOWING SAME

The above exceptions of the Defendant and Intervener to the Order of the Court allowing Plaintiff's Findings of Fact and Conclusions of Law and plaintiff's proposed Interlocutory Decree are hereby noted and said exceptions are allowed said defendant and intervener.

Dated at Tacoma, Wash., this 1st day of Feb. 1938.

EDWARD E. CUSHMAN.

District Judge

[Endorsed]: Filed Feb. 1, 1938. [86]

[Title of District Court and Cause.]

PETITION FOR APPEAL

To the Honorable Judge of Said Court:

The above-named defendant, The Pacific Marine Supply Company and the intervener, Webb Products Co. Inc., feeling aggrieved by the Interlocutory Decree entered in the above-entitled cause on the first day of February 1938, petition that they may be permitted to take an appeal from said Interlocutory Decree to the United States Circuit Court of Appeals for the Ninth Circuit for the reasons specified in the Assignment of Errors filed herewith, and prays that its appeal be allowed and that a Citation be issued as provided by law, and that a transcript of the record, proceedings, and documents upon which said decree was based duly authenticated be sent to the United States Circuit Court of Appeals for the Ninth Circuit under the rules of such Court in such case made and provided.

And your Petitioners further pray that an Order be made fixing the amount of security for costs and for staying [87] the issuance of the Writ of Injunction and for staying the accounting which said defendant and intervener shall give and furnish upon such appeal, pending the final determination thereof.

Dated: This 4th day of February, 1938.

FRED H. MILLER

G. E. STEINER

Attorneys for Defendant and
Intervener

[Endorsed]: Filed Feb. 7, 1938. [88]

[Title of District Court and Cause.]

ASSIGNMENT OF ERRORS

Now come the Pacific Marine Supply Company defendant, and Webb Products Co., Inc. intervener, appellants in the above-entitled cause, and file the following assignment of errors upon which they will rely in the prosecution of the appeal herewith petitioned for in said cause from the Intercolutory Decree entered the first day of February 1938.

1.

The Court erred in finding that Letters Patent No. 1,838,618 issued December 29, 1931, to Manfred E. Griffiths for Plastic Composition were good and valid in law, and that claims 5, 8, 13, 16, and 17 had been infringed by the defendant and intervener.

2.

The Court erred in granting an injunction perpetually enjoining the defendant The Pacific Marine Supply Company and the intervener Webb Products Co. Inc. from directly or indirectly making, or causing to be made, selling or causing to be sold, or threatening to make, use, or sell, or in any way using or profiting from the making, using, and/or selling [89] "Duratite Wood Dough," alleged to be made in accordance with the inventions, improvements, and discoveries of claims 5, 8, 13, 16, and 17 of said Letters Patent No. 1,838,618, or in any wise infringing said Letters Patent and from contributing to the infringement of said Letters

Patent by others, or conspiring with others to infringe said Letters Patent in any way whatsoever.

3.

The Court erred in decreeing that the defendant and intervener account to the plaintiff for any gains, profits, and/or advantages which the defendant and/or intervener have received or made.

4.

The Court erred in ordering that defendant and intervener's proposed findings of fact numbered 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 14, 15, 16, 17; that portion of proposed finding of fact designated at 18b by the Order dated February 1, 1938; 19, and defendant and intervener's proposed conclusion of law numbered 20, be denied.

5.

The Court erred in allowing and adopting plaintiff's proposed findings of fact numbered 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, and 19.

6.

The Court erred in allowing and adopting plaintiff's proposed conclusions of law numbered 1, 2, 3, 4, and 5.

7.

The Court erred in failing to hold that claim 5 of Griffiths patent No. 1,838,618 is invalid in view of the disclosure in United States Letters Patent to Pierson No. 65,267, issued May 28, 1867. [90]

8.

The Court erred in failing to hold claim 5 of Griffiths patent No. 1,838,618 invalid in view of the disclosure of the British patent to Oblasser et al. No. 19,242 of 1892.

9.

The Court erred in failing to hold claim 5 of Griffiths patent No. 1,838,618 invalid in view of the state of the art as evidenced by the following:

United States Patents

Merrick	1,203,229
Black	1,294,355
Eckstein	458,157
Deitz and Wayne	133,969
Ellis	999,490
Grawl	1,652,353
Arnold	1,195,431
Lindsay	1,493,207
Hyatt and Blake	89,582
Reagles	311,203
Jarvis	329,313
Dunwoody and Wills	1,187,890
Ritschke	1,497,028

and the British patents to:

Mennens	2,775	Nov. 13, 1860
Bulling	169,177	Dec. 18, 1922
De Pont et al	24,790	Nov. 5, 1896
Thompson	27,534	Nov. 23, 1897
Parks	2,675	Oct. 28, 1925
“	1,614	May 16, 1868

10.

The Court erred in failing to hold that claim 8 of Griffiths patent No. 1,838,618 is invalid in view of the disclosure in United States Letters Patent to Pierson No. 65,267 issued May 28, 1867.

11.

The Court erred in failing to hold claim 8 of Griffiths patent No. 1,838,618 invalid in view of the disclosure of the British patent to Oblasser et al, No. 19,242, of 1892.

12.

The Court erred in failing to hold claim 8 of Griffiths patent No. 1,838,618 invalid in view of the state of the art, particularly those patents as listed in the foregoing assignment numbered 9.

13.

The Court erred in failing to hold claim 13 invalid for lack of invention over the disclosures in the United States Letters Patent to Pierson No. 65,267 and the British patent to Oblasser et al. No. 19,242 of 1892, particularly in view of the fact that acetone was a well recognized solvent for nitrocellulose prior to the date of Griffiths' invention and that the effects of castor oil and resinous bodies or gums in nitrocellulose plastic compositions were well known and well recognized prior to the effective date of Griffiths' invention.

14.

The Court erred in failing to hold that claim 13

of the Griffiths patent No. 1,838,618 is invalid as lacking invention over the disclosures of the prior art, particularly those patents as listed in foregoing assignment numbered 9. [92]

15.

The Court erred in failing to hold claim 16 invalid for lack of invention over the disclosures in the United States Letters Patent to Pierson No. 65,267 and the British patent to Oblasser et al. No. 19,242 of 1892, particularly in view of the fact that acetone was a well recognized solvent for nitrocellulose prior to the date of Griffiths' invention and that the effects of castor oil and resinous bodies or gums in nitrocellulose plastic compositions were well known and well recognized prior to the effective date of Griffiths' invention.

16.

The Court erred in failing to hold that claim 16 of the Griffiths patent No. 1,838,618 is invalid as lacking invention over the disclosures of the prior art, particularly those patents as listed in foregoing assignment numbered 9.

17.

The Court erred in failing to hold that claim 17 of Griffiths patent No. 1,838,618 is invalid in view of the disclosure in United States Letters Patent to Pierson No. 65,267, issued May 28, 1867.

18.

The Court erred in failing to hold claim 17 of Griffiths patent No. 1,838,618 invalid in view of the disclosure of the British patent to Oblasser et al. No. 19,242 of 1892.

19.

The Court erred in failing to hold claim 17 of Griffiths patent No. 1,838,618 invalid in view of the state of the art, particularly those patents as listed in the foregoing assignment numbered 9. [93]

20.

The Court erred in failing to hold that claims 5, 8, 13, 16, and 17 of Griffiths patent No. 1,838,618 are invalid as being vague and indefinite.

21.

The Court erred in failing to hold claims 5, 8, 13, 16, and 17 of Griffiths patent No. 1,838,618 are invalid as being broader than the invention.

22.

The Court erred in failing to hold claims 5, 8, 13, 16, and 17 of Griffiths patent No. 1,838,618 are invalid for the reason that there is no foundation in the specification or any definition therein as to what constitutes a doughy, putty-like plastic composition.

23.

The Court erred in failing to hold that claims 5, 8, 13, 16, and 17 of the Griffiths patent No. 1,838,618 were invalid as being vague and indefinite as to

when a composition hardens into substantially the rigidity and solidity of wood and in failing to find that the defendant's and intervener's compositions did not harden into substantially the rigidity and solidity of gypsum.

24.

The Court erred in failing to hold that as the closest prior patents, such as the United States patent to Pierson No. 65,267 and the British patent to Oblasser et al. No. 19,242 of 1892 were not cited by the Patent Office nor considered by the Supreme Court of the District of Columbia that the presumption of validity is materially weakened, if not entirely destroyed.

25.

The Court erred in failing to hold that claims 5, 8, 13, 16, and 17 of Griffiths patent No. 1,838,618 were invalid [94] over the disclosure in the prior publication "Engineering", defendant's Exhibit A9.

26.

The Court erred in admitting the deposition of Leslie Soule in evidence.

27.

The Court erred in admitting the depositions of Manfred Ethelwold Griffiths and Ernest Caizley Murray, and refusing to strike these depositions from the record on the ground that public use of an invention in a foreign country more than two years before filing an application for a patent in

this country operates as an abandonment of the invention.

28.

The Court erred in admitting the Griffiths and Murray depositions and in refusing to strike them on the ground that prior invention in a foreign country but not in this country and not coupled with an introduction of the invention in this country cannot be used to overcome the date of the anticipating reference "Engineering".

29.

The Court erred in failing to hold, had the Examiner in the Patent Office cited the Engineering reference, defendant's Exhibit A9, that Griffiths' claims would have been forced to be refused under Patent Office Rule 75.

30.

The Court erred in holding that the defense of prior knowledge and prior public use in the United States of the invention covered by the patent has not been established.

31.

The Court erred in failing to hold that the pleaded disclosures do describe the composition as defined by claims 5, 8, 13, 16, and 17 of Griffiths patent No. 1,838,618, in such [95] full, clear terms as to enable a person reasonably skilled in the art of plastics to prepare the composition as defined by these claims.

32.

The Court erred in giving any weight to the decision of the District Court for the District of Massachusetts in *The A. S. Boyle Company vs. Harris-Thomas*, 18 Fed. Supp. 177, when that case was tried after the prior case was tried and the decision rendered after the present case was submitted, and it does not appear that the Court therein considered pertinent prior patents such as *Pier-son* patent No. 65,267, defendant's Exhibit A7, and the British patent to *Oblasser* No. 19242 of 1892, defendant's Exhibit A10.

33.

The Court erred in awarding any accounting when it appears that by applying a proper standard of comparison that the profits and/or damages to which the plaintiff would be legally settled would necessarily be negligible.

34.

The Court erred in holding that claims 5, 8, 13, 16 and 17 of *Griffiths* patent No. 1,838,618 have been infringed by either the defendant or intervener.

35.

The Court erred in failing to promptly dismiss the Bill of Complaint as soon as it was ascertained that this suit had been brought against one of the intervener's distributors whose volume of business in *Duratite Wood Dough* was very small, and that it was brought for the purpose of inconveniencing

the intervener after the plaintiff had knowledge of the intervener and its activities and had been virtually invited to assert its claims directly against the intervener. [96]

36.

The Court erred in failing to apply the doctrine that a mere change in degree from the disclosures of the prior art is not a patentable invention.

G. E. STEINER

FRED H. MILLER

Attorneys for Defendant and Intervener

[Endorsed]: Filed Feb. 7, 1938. [97]

[Title of District Court and Cause.]

ORDER ALLOWING APPEAL
WITH SUPERSEDEAS

Considering the Petition for Appeal in the above entitled cause, this day presented

It is ordered that an appeal be allowed to The Pacific Marine Supply Company, defendant herein, and Webb Products Co., Inc., intervener herein, from the Interlocutory Decree rendered against the defendant and intervener in the above entitled and numbered cause upon giving bond as required by law for the sum of Two Hundred Fifty Dollars (\$250.00); that said appeal shall be returnable to the United States Circuit Court of Appeals for the Ninth Circuit.

It is further ordered that all execution and other process upon the judgment for costs shall be stayed until the final determination of said appeal upon execution and filing of bond in the sum of One Thousand Five Hundred and no/100 Dollars (\$1500.00).

It is further ordered that all execution and other process upon the Writ of Injunction and proceedings upon the accounting, in accordance with said Decree, shall be stayed [98] until the final determination of the appeal upon the defendant and intervener executing and filing a bond in the sum of Fifteen Thousand and no/100 Dollars (\$15,000.00).

It is further ordered that a certified transcript of the record, testimony, exhibits, stipulations, and all proceedings be forthwith transmitted to and filed in the United States Circuit Court of Appeals for the Ninth Circuit according to law as prayed for.

It is further ordered that the above mentioned bonds to supersede said judgment for costs and said Injunction and said proceedings upon accounting shall be furnished on or before March 1, 1938.

It is further ordered that the bonds above ordered may be included in one or more bonds, providing it is indicated in the bond the purpose for which said bond is furnished.

Dated this 7th day of February, 1938.

EDWARD E. CUSHMAN

U. S. District Judge

[Endorsed]: Filed Feb. 7, 1938. [99]

[Title of District Court and Cause.]

BOND ON APPEAL SUPERSEDING
INJUNCTION

Know All Men by These Presents:

That the Webb Products Company, Inc., a corporation as principal, and the United States Fidelity and Guaranty Company, a corporation, as surety, are held and firmly bound unto The A. S. Boyle Company, a corporation, in the penal sum of Sixteen Thousand Seven Hundred Fifty Dollars (\$16,750.00) to be paid to the said The A. S. Boyle Company, its successors or assigns, for which payment well and truly to be made, the said Webb Products Company, Inc., and the said United States Fidelity and Guaranty Company bind themselves, their successors, and assigns jointly and severally, firmly by these presents.

The condition of the foregoing bond is such that

Whereas, the above named Webb Products Company, Inc., Intervener, and The Pacific Marine Supply Company, have taken an appeal to the United States Circuit Court of Appeals for the Ninth Circuit to reverse the Interlocutory Decree awarding an injunction and an accounting entered in the above entitled suit in the District Court for the United States for the Western District of Washington, Northern Division, on the first day of February, 1938; and

Whereas, said District Court has made an order allowing an [100] appeal to be taken by said Webb

Products Company, Inc. and The Pacific Marine Supply Company to the United States Circuit Court of Appeals from said decree and has fixed the amount of security to be given in order to obtain a supersedeas, stay of execution for costs in the District Court, costs in the Circuit Court of Appeals and stay of proceeding in the District Court pending appeal in the sum of Sixteen Thousand Seven Hundred Fifty Dollars (\$16,750.00).

Now, therefore, the condition of the above obligation is such that if the Webb Products Company, Inc., Intervener, and The Pacific Marine Supply Company, defendant, shall prosecute the said appeal to effect and shall pay to The A. S. Boyle Company (1) all damages and profits which may result from their manufacture and sale of Wood Dough, the manufacture and sale of which are by said decree enjoined, (2) all costs awarded The A. S. Boyle Company in said District Court, and (3) all costs awarded The A. S. Boyle Company in said Circuit Court of Appeals, if they shall fail to make good their plea, then this obligation shall be void, otherwise the same shall be and remain in full force and effect to the extent of Two Hundred Fifty Dollars (\$250.00) for all costs incurred in said appeal; Fifteen Hundred Dollars (\$1500.00) for all costs incurred in the above-mentioned District Court in said action, and Fifteen Thousand Dollars (\$15,000.00) for all damages and profits found in favor

of The A. S. Boyle Company upon the accounting, in accordance with said Interlocutory Decree.

[Seal] WEBB PRODUCTS COMPANY,
INC.

By G. E. STEINER

Its Attorney

[Seal] UNITED STATES FIDELITY AND
GUARANTY COMPANY

By GEORGE C. McCALLISTER

Attorney-in-Fact

I hereby approve the foregoing bond this 1st day of March, 1938.

EDWARD E. CUSHMAN

United States District Judge

3/1/38 Approved.

CLINTON L. MATHIS

One of Attys. for Pl.

[Endorsed]: Filed Mar. 1, 1938. [101]

STATEMENT OF TESTIMONY IN NARRATIVE FORM UNDER EQUITY RULE 75

The following are excerpts from the opening statement of the plaintiff's attorney Mr. Dike.

The patent was issued on its face to The A. S. Boyle Company and therefore no proof of title is necessary.

The subject matter of the patent is a plastic composition, really a wood base putty.

The essential ingredients of this material are: A nitrocellulose material, cellulose nitrate, for instance nitrated cotton, the nature of which will be explained more fully. This material is for instance the base of lacquer and varnish. It is somewhat the same as gun cotton, although it has not been nitrated as much, so material will dissolve in a suitable solvent, for instance alcohol, acetone, or mixture of those materials.

Another ingredient and an important or essential ingredient, is a solvent which makes the solution; and that solvent must be a volatile solvent which will evaporate reasonably quickly leaving the nitrocellulose to harden.

And the third ingredient is a filler. Primarily, the filler is wood flour,—that is to say wood which has been ground to the fineness of flour, so that when this material has hardened the solvent disappears, the nitrocellulose and the wood flour practically form a wood or wood-like material. That material was an entirely new thing at the time when Griffiths made his invention, as you will see from the prior art which will undoubtedly be submitted by the other side.

The Court: Is nitrocellulose supposed to furnish the fiber or bind it together?

Mr. Dike: No. The nitrocellulose is what sticks the [102] mass together.

The Court: The binding?

Mr. Dike: Yes, it is the binding. The wood flour furnishes the body of the material, the structure

you might say. The reason is that you practically have a piece of grainless wood.

Just for the purpose of illustration, the material also contains certain less essential ingredients, for instance: gums and oils, or resins and oils which are added to make it tougher and stronger.

And it has a further few important characteristics: It is very adhesive. It will stick very tenaciously, not only to another piece of wood, piece of natural wood, but it will also adhere very tenaciously to steel or glass. That is a property, you see, of the nitrocellulose solution which is exceedingly sticky. You may possibly be familiar with some cements that have come on the market in recent years. The DuPont Company make one, and these are usually a solution of nitrocellulose in a solvent, and they are used in place of liquid glue.

Now, this material can also be painted and varnished. It has been manufactured in very large quantities by the plaintiff in this case, The A. S. Boyle Company, and is sold by that company under the trade name of Plastic Wood. It is barely possible your honor may be familiar with Plastic Wood. It has been used in a great many places around the home and under various conditions.

The first use for Plastic Wood which I think occurs to most people, is to fill up holes so you can put a screw in and it will hold tightly.

Another very common use is to fill up a dent or a scratch in a piece of furniture that has been injured or [103] bruised.

The Court: It is the bread-board in our house.

Mr. Dike: Then I don't need to say much about it. Plastic Wood has gone into the households of the country.

The claims which are in suit are claims 5, 6, 8, 11, 13, 15, 16, 17, and 18. (After reading claim 5.)

Now, the "cellulose filler" there is a broad term for wood flour and it does not refer to nitrocellulose which is cotton which has been nitrated.

We were allowed certain interrogatories of the defendant as to the composition of the defendant's material and the defendant answered them. He gave solvent 41% by weight, nitrocellulose 10.5% by weight, inorganic 31.3% by weight. That is a general analysis of the Duratite Wood Dough.

I spoke about the second material which is the Duratite Seam Putty, both colored and white. We have decided not to [104] press the charge of infringement in regard to that and will proceed solely on the Wood Dough which is the subject matter of the answer to interrogatory 7. That will simplify the case very much.

Following the opening statement made by the attorney representing the defendant and intervener, in which attention was directed to the Pierson and Oblasser patents and the fact that these patents had not been cited or considered by any tribunal having jurisdiction of whether or not the patent in suit should be granted containing the claims in issue, the plaintiff offered in evidence a copy of Griffiths patent No. 1,838,618 issued December 29,

1931, as plaintiff's Exhibit 1. (A copy of this patent is included in the Bk. of Ex., page 1.)

Mr. Miller: I will stipulate that the plaintiff is a corporation for the purpose of this suit.

GUSTAVUS J. ESSELEN,

a witness called on behalf of plaintiff, testified as follows:

I am 48 years of age and live in Swamscott, Massachusetts. I am a consulting chemist in Boston. I have specialized since 1914 on the chemistry of cellulose and its derivatives. I specialized in chemistry at Harvard College as an undergraduate receiving my Bachelor's Degree in Chemistry; then spent three years in graduate work and receiving my Master's Degree and Doctor's Degree in Chemistry from Harvard. For the next two years I was in one of the research laboratories of the General Electric Company and followed that work for seven years. The biggest part of the time in manufacturing cellulose acetate and materials made from cellulose acetate and part of the time in research and development work along similar lines. Since 1921, I have been a consulting chemist and for a number of years have [105] had my own consulting research organization and laboratories in Boston.

I have read the Griffiths patent in suit.

I have here various samples, one of which is celluloid scrape. Celluloid is a material made out of nitrocellulose and camphor. There are other forms of material which physically resemble cellu-

(Testimony of Gustavus J. Esselen—direct.)

loid, such as motion picture film, and are sometimes called "celluloid" which contain other substances than the camphor; but essentially celluloid is a composition of nitrocellulose and camphor. Now, nitrocellulose is made by treating celluloid chemically. "Cellulose" is the chemical term for a substance which occurs naturally of which cotton is the finest example. Cotton is the purest form of cellulose which occurs in nature. The structural framework of the tree is also cellulose. In other words, we have cellulose in the form of wood pulp which is merely the cellulose of the tree freed from the other constituents so that the two commercial forms of pure cellulose are pure fiber wood pulp and purified cotton lint or cotton in any form. But if you treat the cotton or the purified wood pulp with a mixture of nitric sulphuric acids you get what is known as nitrocellulose. There are three forms of nitrocellulose. The nitrocellulose which contains the highest percentage of combined nitric acid is the explosive gun cotton or smokeless powder. With that we are not concerned.

There are two other kinds of nitrocellulose, one of which is used in the manufacture of celluloid of which I have a bottle here. This has the lowest amount of combined nitric acid and is used in the manufacture of nitrocellulose plastics. And the second variety which is intermediately between the plastic group and the explosive group, is used in making the nitrocellulose lacquers which have come

(Testimony of Gustavus J. Esselen—direct.)
into [106] such wide use in the past ten years. Celluloid is the result where nitrocellulose combines with camphor. And then there is the raw nitrocellulose itself which has not been combined with camphor.

The next sample that I have here is commercial Ester Gum. It is made by treating ordinary rosin with simple chemicals converting it into a simple form of synthetic resin.

The next sample is Industrial Spirit which is more or less the British name for denatured alcohol.

The next sample is Benzol. It is a volatile liquid of very nearly the same boiling point as denatured alcohol which is derived from the distillation of coal oil. I refer to the boiling point merely to bring out the point that both are volatile liquids to which reference is made in the patent.

There is a third volatile liquid mentioned which is Acetone and also later a Methyl Acetone. Methyl acetone is simply a less purer form of acetone. These are chemical substances which originally were derived from distillation of wood and now frequently made synthetically. They are even more volatile than alcohol or benzol and they constitute a very good solvent for the nitrocellulose.

Then reference is made to castor oil which is a common material of which this is a fair sample.

The samples referred to by the witness were then offered and admitted in evidence as plaintiff's Exhibit 28, Celluloid Scrap; plaintiff's Exhibit 29, Ester Gum; plaintiff's Exhibit 30, Castor Oil; plain-

(Testimony of Gustavus J. Esselen—direct.)
tiff's Exhibit 31, Industrial Spirit; plaintiff's Exhibit 32, Benzol; plaintiff's Exhibit 33, Acetone; Plaintiff's Exhibit 34, Methyl Acetone; plaintiff's Exhibit 35, Wood Flour. (These are transmitted as physical exhibits.) [107]

(The witness then read lines 12 to 22, inclusive, of the patent in suit to describe how the material is made.) When that is made you have a thick viscous solution, syrupy, perhaps, or thicker than that. To the viscous solution there is added finely ground wood flour as a filling material in the proportion of 28 parts of filler by weight, to 77 parts by weight, of solution.

This operation is usually carried on in a standard type of kneading or mixing machine much like the machine used for making bread dough in a large bread factory. When that is finished the product looks like the contents of this can of plastic wood. I have here some pieces of material which I have made from plastic wood. I have observed the manufacture of plastic wood. "Plastic Wood" is the trade-name of the product put out by The A. S. Boyle Company. Plastic Wood has an analysis approximately the same as in the example of the Griffiths patent that I read here a few minutes ago. It may be exactly. I haven't compared it recently, figure by figure, but the ingredients are the same and they are in approximately the proportions given here.

(Testimony of Gustavus J. Esselen—direct.)

The material in this can of Plastic Wood is of the general consistency of dough or putty and after it has dried it has the general properties of wood with the exception that it has no grain. These are two samples which are made from Plastic Wood illustrating the properties of the material after it has been dried. There are also two samples showing that the material is essentially similar to wood except that it has no grain. It is possible, for example, to drive nails into it, to put screws in it. There is a piece of Plastic Wood into which I have driven nails and put in a screw. (One of the samples referred to by the witness was offered in evidence as a splint made from Plastic Wood and marked plaintiff's Exhibit 37. [108] This exhibit is forwarded as a physical exhibit.) I have produced two more splints. The thinner one is made of Plastic Wood of the standard light color. One surface has been planed and there are two holes, one near each end which has been drilled in the material. The piece itself has been sawed and sandpapered and in that respect has been worked exactly as wood. It was made under my supervision. (This exhibit was offered and received in evidence as plaintiff's Exhibit 38, forwarded as a physical exhibit.)

I have here a somewhat thinner piece of light mahogany color which was made from a variety of Plastic Wood made specially to produce this particular color. This has also been sawed, one surface was planed, and two holes have been drilled in this

(Testimony of Gustavus J. Esselen—direct.)

piece. It was made under my supervision. (This piece was offered and admitted in evidence as plaintiff's Exhibit 39 and forwarded as a physical exhibit.)

I have another sample of Plastic Wood into which two nails have been driven and one screw has been screwed. (This exhibit was offered in evidence as plaintiff's Exhibit 40. It is forwarded as a physical exhibit.)

I have another piece of Plastic Wood made under my supervision which has been turned in a lathe. It was made from standard Plastic Wood. (This exhibit was offered and received in evidence as plaintiff's Exhibit 41. It is forwarded as a physical exhibit.) This upper small piece is a block of Plastic Wood which is screwed to a piece of pine by means of two screws. The screw with the ring in it only goes through about three-quarters of the way. Occasionally, I have some visitors in my laboratory, and a few weeks ago I had this fastened up over a door with a bar through here and we had a gentleman who weighed about two hundred chin himself on that bar simply to show the strength with which this screw [109] with the ring in it is held in the Plastic Wood. (This exhibit was offered and received in evidence as plaintiff's Exhibit 42. It is forwarded as a physical exhibit.)

This piece of wood with cracks in it or a saw cut in it was filled by me during my testimony. (This exhibit was offered and received in evidence as

(Testimony of Gustavus J. Esselen—direct.)
plaintiff's Exhibit 43. It is forwarded as a physical exhibit.)

The condition of the material made under the Griffiths patent before it hardened in general is of the consistency of ordinary putty. After it hardens it has the general properties and characteristics of wood except that it has no grain.

Q. What do you consider to be the essential ingredients of the formula described in the Griffiths patent?

A. The essential ingredients are nitro-cellulose and a volatile solvent and a finely divided cellulose or wood flour filler.

Q. What are the effects or the influence of the non-drying oil? What is the purpose of that or the effect of that?

A. Well, if the non-drying oil were not used, the material would dry and harden to a very brittle composition lacking in toughness.

Q. Have you ever seen any material made with the three essential ingredients and without the other two?

A. Yes, I think I have.

Q. Perhaps I can refresh your memory. Did you see any in connection with the trial in the Supreme Court of the District of Columbia, in Washington?

A. Yes, I remember in connection with that I made some.

The Court: Are you prepared to tell me what the object is of a number of solvents of the same composition? [110]

(Testimony of Gustavus J. Esselen—direct.)

A. Yes. Acetone is the real solvent, but acetone, particularly up to very recently, has been quite expensive. Denatured alcohol and benzol are cheaper, and they are simply put in there to dilute the acetone. It is largely a matter of economics, to bring the cost down. Now, these materials have to be chosen with certain properties, or they might throw the nitro-cellulose out of the solution. But denatured alcohol and benzol have the property of being miscible to a certain extent with acetone and still retain the acetone or celluloid scrap in the solution. They are simply used to bring the cost down.

Q. What is the effect of the non-drying oil?

A. The non-drying oil adds to the toughness of the composition.

Q. And the ester gum?

A. The ester gum adds to the property of adhesiveness, to make it stick.

Q. Is nitro-cellulose itself adhesive?

A. To certain surfaces, and to a limited extent.

Mr. Dike: Now I will offer in evidence the answer to interrogatory No. 7. I will read the answer,—or read the interrogatory first.

The Court: Admitted.

Mr. Dike: "Does the following analysis state correctly the ingredients and percentages of the composition of material used or sold by defendant under the name of Duratite Wood Dough since December, 1931 and prior to the filing of the bill of complaint herein? If not correct, state the correct analysis,"

(Testimony of Gustavus J. Esselen—direct.)

and below follows the analysis which was proposed. The answer to the interrogatory was: "The answer to interrogatory 7 is No." That is that the analysis proposed by the interrogatory was not correct. [111] "The correct analysis of Duratite Wood Dough is as follows: Solvent, 41% by weight; nitro-cellulose, 10.5% by weight; gums and oils, 5.7% by weight; filler, 11.5% by weight; inorganic materials, 31.3% by weight."

Q. Have you made an examination of the materials taken from cans labeled "Duratite Wood Dough?"

A. I have.

Q. What were the solvents?

A. The solvents were composed of acetone, ethyl alcohol and wood alcohol.

Q. What was the filler?

A. There were two types of filler; one was wood flour, similar to the sample offered in evidence, and one was a mineral filler which was identified as gypsum.

Q. Did you make any attempt to identify the oils and gums?

A. The oil present was castor oil.

By Mr. Dike:

Q. Will you please tell us what learned societies you belong to?

A. I am a director of the American Chemical Society; a director of the American Institute of Chemical Engineers; a member and fellow of the

(Testimony of Gustavus J. Esselen—direct.)

American Association for the Advancement of Science; also a fellow of the American Institute of Chemists, and member of the Association of Consulting Chemists and the Chemical Engineers, and a member of the Society of Chemical Industry of Great Britain.

Q. Have you any correction to make in your testimony as to the ingredients of Plastic Wood?

A. Yes. The last thing on Tuesday of last week, in answer to a question in regard to the ingredients of Plastic Wood, I stated that there were the same ingredients as [112] given here in the patent. That was true during the first years that Plastic Wood was made in this country. In the last few years a slight change has been made in the ingredients.

Mr. Miller: May I interrupt? I would like to have a better foundation as to whether this is wholly within this man's own knowledge.

Mr. Dike: He said he had seen Plastic Wood made.

The Court: You can testify, you understand, only from your own experiments and observation.

A. Your Honor, I have seen Plastic Wood made in these two different ways. I know what this is. In fact, I recommended that the change be made.

As I was saying, in the early years the Plastic Wood was made with the materials stated in the patent. Benzol—there was some thought that it was a poison—that the vapors of this might be harmful to the users. Therefore, we changed to toluol. That

(Testimony of Gustavus J. Esselen—direct.)

is a very minor change, because ordinary commercial benzol, as ordinarily purchased, contains an appreciable quantity of toluol; and toluol is simply the next adjacent member of the chemical series of which benzol is the first member. Toluol is the next. And, as I say, commercial benzol usually contains an appreciable quantity of toluol. And the other day I had forgotten that they now use toluol exclusively instead of the benzol.

Q. What is the present formula for Plastic Wood?

A. On a percentage basis, the present formula for Plastic Wood is as follows:

Celluloid scrap	12.3%
Ester gum	6.2%

3.5% of castor oil. The next item is 10.4% denatured alcohol, and the next is 22.7% of toluol, and of acetone I think that is also 22—acetone is—I am sorry, in [113] this list I have here I haven't got acetone. Acetone is about 22%.

Wood filler 22.9%.

The exact figure for acetone I will have to get later because, through an error, it is not in the formula which I have.

Q. Now in your testimony last week you said that you found acetone, ethyl alcohol and wood alcohol in the defendant's Duratite Wood Putty. Will you state whether or not these are volatile liquids?

A. These are volatile liquids.

(Testimony of Gustavus J. Esselen—direct.)

Q. Now in the patent of Griffiths a ketonic liquid is used. Will you state what you mean by a “ketonic liquid?”

A. A ketonic liquid is a liquid which contains an appreciable proportion of ketones. Ketones are a general class of organic compounds, just as alcohols are a class and esters are a class. Acetone is the simplest and most common member of the class of ketones. There are other higher ketones, but acetone is the simplest and most common member of that class of materials.

Q. Now you said that you identified the fillers you found in Duratite Wood Dough as wood flour and gypsum. What is the relative bulk of these two substances?

A. I would like to illustrate my answer, because that shows it better than mere figures. If I may have the exhibit of wood flour that I had the other day. The bulk of equal weights of wood flour and gypsum is approximately five to one, the wood flour taking up approximately five times as much space as the equal weight of gypsum.

I have in these two bottles here equal weights. This one is gypsum and this one is wood flour and that, as I say, shows very clearly the difference in bulk of the two materials. [114]

Q. The witness refers to Plaintiff's Exhibit 35, a bottle of gypsum presented by the witness, and also to the exhibit marked Plaintiff's Exhibit 45.

The Court: Admitted.

(Testimony of Gustavus J. Esselen—direct.)

(This was marked plaintiff's Exhibit 45 and is forwarded as a physical exhibit.)

Mr. Dike: Q. How does the bulk of the 31.3 parts of gypsum in the Duratite Wood Dough compare with the bulk of 11.5 parts of wood flour?

A. It is a little more than half the bulk of the wood flour. That is the volume normally occupied by the amount of gypsum is just a little over half that occupied by the 11.5 parts of wood flour, which is called for in the Duratite Wood Dough formula.

Q. Have you some Duratite Wood Dough here?

A. I think so.

Q. Is this it?

A. Yes, that is a sample of Duratite Wood Dough.

Q. Will you open it and show it to the Court? Look at it, Mr. Miller.

A. It has essentially the consistency of Plastic Wood.

Q. Will you compare it as to its physical properties, both before and after hardening?

A. Before hardening it has essentially the same physical properties and working properties as Plastic Wood has before hardening, as it comes in the can; and after hardening it dries down to a substance resembling wood, as does Plastic Wood.

I have here a piece of pine in which two cracks, two similar cracks, were made. One of them has been filled with Plastic Wood under my direction and the other has been filled [115] with Wood Dough under

(Testimony of Gustavus J. Esselen—direct.)

my direction, and it is almost impossible to tell by looking at them—

Mr. Dike: The block produced by the witness is offered in evidence, the same to be marked Plaintiff's Exhibit 46.

The Court: Admitted.

(It is forwarded as a physical exhibit.)

Mr. Dike: The can of Duratite Wood Dough produced by the witness is also offered in evidence as Plaintiff's Exhibit 47.

The Court: Admitted.

(It is forwarded as a physical exhibit.)

Mr. Dike: Q. Now, during your examination last week you referred to a can of Plastic Wood which was marked for identification. Where did you get that can?

A. That can was sent to me by Mr. Silbersack or at his direction from the factory of the Plastic Wood Company or The A. S. Boyle Company in Cincinnati.

Q. Have you prepared a comparative statement of the analyses of the proportions of ingredients of the formula given in lines 14 to 22 of page 1 of the Griffiths patent, the formula for Plastic Wood, and the formula for the Duratite Wood Dough given in the answer to the Plaintiff's interrogatory? If so will you produce it?

A. Just a minute, please. I notice that the stenographer left out one of the figures and I would

(Testimony of Gustavus J. Esselen—direct.)

like an opportunity to fill that in. That is the blank I had in my previous testimony, the one for acetone that was left out.

Q. Will you fill that in?

A. I will mark in here and present this tabulation. I haven't the figure with me. If I may have just a moment I can fill it in. That percentage of acetone which I couldn't [116] give exactly before, is 22%.

Q. So if you write the figure 22 in it will be correct?

A. If I write the figure 22 opposite the word "acetone" that will be correct. That is the second column of figures.

Mr. Dike: The comparative schedule is offered in evidence.

Mr. Miller: I object to it as being purely cumulative. The interrogatory and the Griffiths patent speak for themselves.

The Court: Getting them together will save time, probably. The objection is overruled. Admitted.

(It is reproduced in the Book of Exhibits, page 5 and is marked Plaintiff's Exhibit 48.)

Cross Examination

By Mr. Miller:

Q. Dr. Esselen, when did you make this analysis of Duratite Wood Dough?

(Testimony of Gustavus J. Esselen—cross.)

A. I made an analysis of Duratite Wood Dough last summer. I think it was in August.

Q. Out of a can of Wood Dough that was purchased by somebody?

A. Yes. I have the can here from which the sample was taken, the empty can.

Q. And how much ethyl alcohol did you find in that?

A. I did not ascertain the amount quantitatively.

Q. How did you determine that there was any in there?

A. How did I determine there was any in there?

Q. Yes.

A. We separated out the solvents and made a fractional [117] distillation.

Q. And that is your method of testing for ethyl alcohol, that you reported?

A. That is right.

Q. And how about the wood alcohol?

A. The wood alcohol was examined similarly. The amount of that also was separated out by fractional distillation.

Q. And that was the sole test that you made for wood alcohol?

A. Except, we made, as a result, a saponification test on it. The analysis, as I say, was carried out some months ago and I have forgotten the details of the test that was made on it.

Q. Did you find any other solvent in the Wood Dough besides acetone and wood alcohol?

(Testimony of Gustavus J. Esselen—cross.)

The Court: You haven't the details of every test or any details of the test?

A. I have forgotten the details of the various intermediate steps that were performed, was the answer to Mr. Miller's question. I was primarily interested to find whether or not there was acetone present. That was positively identified and there may have been other solvents present besides those that I have mentioned.

Q. Well, didn't you test to find out whether there were some other solvents besides acetone wood alcohol and the ethyl alcohol?

A. I did not.

Q. Did you find any substantial percentage in your fractional distillation of wood alcohol and ethyl alcohol present?

A. Not of wood alcohol and the amount of denatured alcohol was as I say. I made no quantitative examination. [118] It was not—it was an appreciable amount and that is about all I can say.

Q. What do you mean by an appreciable amount?

A. Well, as I say, I haven't the quantitative figures. I can't give them to you.

Q. Well, did you find more than a trace?

A. Yes.

Q. Would you say that you found as much as 5%?

A. I am not prepared to say.

(Testimony of Gustavus J. Esselen—cross.)

Q. I notice in the record of this case that there was an interrogatory proposed of the intervener here asking whether or not their Wood Dough contained these ingredients and in these percentages. Do you know whether that question was framed from an analysis that you made of Wood Dough?

A. I do not.

Q. Now, you state that you have read this Griffiths patent. Do you have a copy of that patent before you?

A. Yes.

Q. I wish to call your attention to line 4, page 1, where he speaks of using this material for coating. Do you know how that is done?

A. I have seen pieces of material in which there were dents, and these dents have been coated with Plastic Wood to fill up the dents.

Q. Is that done by adding additional solvent so as to make this composition of Mr. Griffiths' rather fluid?

A. When I have carried out such operations myself I have taken the Plastic Wood as it normally comes and placed a little portion, one-eighth of an inch in the bottom of the dent, depending on how deep the dent was. If it was deeper than one-eighth or three-sixteenths, I let that dry and put on a second layer, building it up the full depth of the dent. [119] I have used the Plastic Wood just as it came from the can, similar to the can that I have in evidence here.

(Testimony of Gustavus J. Esselen—cross.)

Q. You have never taken a solvent and applied to the Plastic Wood, though, in making coatings?

A. I never have.

Q. Have you ever seen it done?

A. I have never seen it done.

Q. With regard to this molding that he mentions in line 5, how is that done?

A. Well, all the molding which I ever did I have done with my fingers.

Q. Have you ever seen it placed in a metal mold of some predetermined shape, molded and allowed to dry after it has been shaped by that metal mold?

A. Yes, where the metal mold was filled with the fingers, I have done that myself. I have filled the metal mold with my fingers and allowed it to dry and removed it from the mold.

Q. And that made some sort of an object like a statuette, did it?

A. No, I have made just flat—primarily flat test pieces which I have made with it.

Q. Now I notice here beginning about line 76 Mr. Griffiths states that in place of celluloid three other forms of nitro-cellulose may be used. What other forms are suitable?

A. You can use moving picture film scrap or you can use 11% nitro-cellulose or you can probably use—when I say 11% nitro-cellulose I mean cellulose which contains 11% of nitrogen and is commonly used in the manufacture of celluloid. You can also use, probably less advantageously, the various

(Testimony of Gustavus J. Esselen—cross.)

nitro-celluloses that are ordinarily used in making lacquers. [120]

Q. Did you use pyroxyline?

A. Yes, you can use the material that is ordinarily called pyroxyline. That term usually applies to the nitro-cellulose that contains 11% nitrogen to which I have already referred.

Q. And how about collodion wool?

A. That of course all depends on what you mean by "collodion wool". Sometimes the term "collodion wool" is applied to the explosive grade of nitro-cellulose and you can't use that—that is, it would be unadvisable to use it.

Q. Can you use collodion?

A. When you use the term "collodion", Mr. Miller, it is a very indefinite term. There are some forms of collodion that could be used.

Q. And how about xyloidine, I believe it is generally called?

A. I am not familiar with that material.

Q. Never heard of it?

A. No.

Q. Gun-cotton is also a nitro-cellulose, is it not?

A. It is.

Q. Do you find any disclosure in the Griffiths patent that gun-cotton is unsuitable?

A. Is unsuitable?

Q. Yes, in his composition.

A. A negative statement? Well, I don't remember any reference to gun-cotton here. There may be one.

(Testimony of Gustavus J. Esselen—cross.)

Q. Then all he says is that other forms of nitro-cellulose may be used, in line 88, he doesn't tell you not to use any unsuitable nitro-cellulose such as gun-cotton, isn't that true?

A. Yes, because he would naturally expect anyone [121] would know not to use an explosive in a material of that sort. So far as the physical properties are concerned, of course it could be used.

Q. I believe you testified here in your direct examination that you knew of three nitro-celluloses, one of which was gun-cotton. What are the other two?

A. The other two, one of the other two is the so-called 12% nitro-cellulose, the percentage referring to the percentage of combined nitrogen. That is the variety that is ordinarily used in the manufacture of lacquer. The third variety is the variety which contains approximately 11% of combined nitrogen; and that is the variety that is ordinarily used in the manufacture of celluloid.

Q. These are the only three that you know of? Is that correct?

A. When one is speaking of nitro-cellulose, it is impossible to draw a sharp line. There is a gradual graduation from one to the other. These three general classifications are the three general classifications which are known in the trade: The explosive variety, the lacquer variety and the plastic variety. Now, the exact percentage of nitrogen in each of these varies within certain recognized limits.

(Testimony of Gustavus J. Esselen—cross.)

Q. Did you ever read any literature pertaining to the manufacture of nitro-cellulose?

A. Yes.

Q. By the way, how is nitro-cellulose made, ordinarily?

A. Ordinarily, nitro-cellulose is made by taking a purified cellulose, sometimes purified cotton linters and sometimes purified wood pulp, drying it and treating with a mixture of nitric and sulphuric acid under carefully controlled conditions of temperature and time. The acid is then thoroughly [122] washed out and the water removed, usually by means of alcohol, and then the nitro-cellulose is ready for use, whatever the use may be.

Q. Have you ever read, by any chance, Bockmann on "Celluloid"?

A. I don't think I have.

Q. I call your attention here to page 11 of Bockmann on "Celluloid", in which he states that:

"The actual nitro-compound formed depends on the strength of the nitric acid, the length of the reaction and the temperature of the acid mixture, as well as on the nature of the cellulose material used. The nitro-group may combine two, three, four, five or six times with the cellulose, and furnish the following compounds:

Dinitro-cellulose, containing 2 nitro groups;

Trinitro-cellulose, containing 3 nitro groups;

Tetranitro-cellulose, containing 4 nitro groups;

Pentanitro-cellulose, containing 5 nitro groups;

(Testimony of Gustavus J. Esselen—cross.)

Hexanitro-cellulose, containing 6 nitro groups.”

Do you agree with that statement?

A. May I ask the date of the publication of that book?

Q. I want to know whether you agree with that statement or not.

A. That statement is a statement which was made, I think, in the latter part of the last century or the early part of the present century, and describes a classification which was in use at that time for the classification of nitro-cellulose. There are other classifications which can be found which are equally representative, and that is not the classification which is used at the present time. It is a classification which has been in technical use in the past.

Q. Well, these five different nitro-celluloses that [123] are listed in that book do form, do they not?

A. They do, and they are included in the groups I have previously given; but I gave the present-day classification.

Q. Which of these five nitro-celluloses are suitable for use in this Griffiths specification?

A. I can't tell you because I am not in the habit of using that classification.

Q. Are you unfamiliar with those five nitro-celluloses by their chemical formula?

A. As I say, I am not in the habit of using that classification. I could probably sit down and figure it out, but that is not the present-day classification.

Q. Do you find any disclosure in the Griffiths

(Testimony of Gustavus J. Esselen—cross.)

patent either using that classification or the present-day classification, telling you what kind of nitro-cellulose to use and what not to use?

A. Obviously he is referring to those kinds which are commercially available.

Q. I am not asking you what is "obviously". I am asking you what is disclosed in that.

A. He discloses in his patent to use the varieties which are commercially available. The things which are laboratory curiosities he is not referring to here.

Q. You do not consider gun-cotton a laboratory curiosity, do you?

A. No.

Q. How about penta-nitro-cellulose?

A. To accommodate you I am trying to do some mental arithmetic rather fast. I think penta to which you refer is probably in the explosive range but I cannot be sure.

Q. Now, you have here some nitro-cellulose. Do you know what kind of nitro-cellulose that is in Exhibit 27? [124]

A. Yes.

Q. What kind?

A. That is the plastic variety.

Q. You don't know whether that is the trinitro-cellulose or the dinitro-cellulose?

A. I know it is not the trinitro-cellulose because that is almost never made; but it contains about 11% of combined nitrogen. By that I could figure out

(Testimony of Gustavus J. Esselen—cross.)

which one of your classifications it belongs to, if it is important.

Q. How does the material, Exhibit 27, compare with pyroxyline?

A. It is essentially the same thing.

Q. And how does it compare with collodion?

A. Usually collodion refers to a solution of nitro-cellulose in a solvent, usually alcohol and ether.

Q. A solvent of alcohol and ether?

A. An ethyl alcohol and ether.

Q. Now Mr. Griffiths here in line 82, page 1 of his patent states that ester gum can be replaced by other resins. What other resins can be used in place of ester gum?

A. Personally I haven't used any others.

Q. Do you know of any others that can be used?

A. I presume one could use elemi gum or maybe one could use mastic or gum thus. As I say, I have never used, myself, any other than ester.

Q. How about sandarsal?

A. I don't know.

Q. How about gum amber?

A. It would be very difficult to use gum amber, and expensive. It possibly could be used.

Q. How about ordinary rosin?

A. I don't know. [125]

Q. Then, it is stated here in line 90 at the bottom of page 1 and in the first few lines of page 2 that "Other solvents may be used in place of ketones,

(Testimony of Gustavus J. Esselen—cross.)

but the latter are preferable." Do you know what other ketones can be used?

A. Well, one that occurs to me is ethylacetate.

Q. How about a mixture of alcohol and ether?

A. Yes, that could be used.

Q. How about acetic ether?

A. Acetic ether is ethyl-acetate, the one I just referred to.

Q. I notice that Mr. Griffiths gives the composition here on page 2, lines 12 to about 20, in which he makes up a plastic wood or a plastic composition including a mineral filler. How is the bulk of that China clay compared with the wood flour in that suggested formula?

A. I don't know.

Q. How does the bulk of China clay compare with the gypsum shown here in exhibit 45?

A. I don't know. I have never tried it.

Q. In that suggested composition of Mr. Griffiths' where he includes a mineral filler he has more wood flour than he has China clay. Do you find that was true of the wood dough when the gypsum was included?

A. You mean by weight?

Q. Yes.

A. Yes, the formula weight that was given in the bill of particulars shows the wood flour had 11% and a fraction by weight and the gypsum was thirty-one and a fraction by weight.

(Testimony of Gustavus J. Esselen—cross.)

Q. Then the gypsum material outweighed the wood flour in the wood dough?

A. It did. [126]

Q. And that was not true in this suggested composition of Griffiths'?

A. No, they were nearly alike there; a little less China clay than wood flour.

Q. Now, do you have here sufficient ingredients to make up a sample in the courtroom of Griffiths' preferred formula as disclosed in lines 14 to 22 on page 1?

A. I have no idea, I did not come prepared to do that.

Q. You have samples of all of these ingredients here?

A. I have samples of all the ingredients. It would be rather a difficult job to make up a sample of the celluloid solution in the courtroom.

Q. And why is that so difficult?

A. Because it takes a very long time and a very active stirring to get the celluloid to dissolve.

Mr. Miller: If your Honor please, I propose to have Mr. Esselen make up a sample of Plastic Wood according to this formula from these ingredients in the court room and at the same time, in order to save time, Mr. Webb make up a sample of the plastic composition as disclosed in the Pierson patent. It will take some time to dissolve the nitro-cellulose and we are prepared here with scales, containers, and I think all the necessary ingredients to make

(Testimony of Gustavus J. Esselen—cross.)

these two up so that the nitro-cellulose can dissolve in the solvent during the day and towards evening we can incorporate the wood flour in it, making up the respective compositions and make some comparative tests.

Mr. Dike: I suggest if the defendant desires to make experiments of that kind they proceed to do so by their own witness. Then they will have no question as to what is [127] being done. The exhibits I have here I would like to retain for the purpose of the Court of Appeals. I do not think there is enough to make up any substantial sample. If they want to produce their own material, all right.

Mr. Miller: We have our own material for the Pierson composition.

Mr. Dike: I assume you will do what you see fit with your own witnesses.

Mr. Miller: I *would to* have Mr. Esselen make up the Griffiths composition in accordance with the Griffiths patent from these ingredients he has supplied here.

The Court: Well, there seems to be an objection.

Mr. Miller: I do feel this way about it: That the Court should be informed fully as to how these compositions are made up, see them made up so there will be no criticism of experts' experiments, and see how they work out here in the court room. It is true that we have examples of experiments already conducted, we have the samples here in the court room that we will offer in evidence; but on account of

(Testimony of Gustavus J. Esselen—cross.)

some of the Court's decisions they pay very little attention to ex-parte experiments and I would like to have them done right in the court room so that the Court can see it done.

The Court: I do not understand the plaintiff's attorney to accept your offer. The Court will not, in the absence of a stipulation, direct the experiment to be made in court. After your offer, anybody here objecting to your ex-parte experiments on the ground that they were ex-parte, the Court would not reach out to embrace.

Mr. Miller: Well, possibly I would better make an offer in the nature of an offer to prove, and I offer to prove at this time to have Mr. Esselen make up the compositions from these ingredients and at the same time, under identical [128] conditions Mr. Webb, whom I would like to have sworn as a witness, make up a sample of the Pierson composition for the purpose of absolute comparison under identical conditions. I would like to have the Court instruct the witness then to make up the plastic composition in accordance with the Griffiths patent.

The Court: Any objection?

Mr. Dike: Yes, your Honor, I think any experiments that the defendant desires to conduct should be conducted by his own witnesses.

The Court: Objection sustained.

Mr. Miller: May we have an exception?

The Court: Allowed.

(Testimony of Gustavus J. Esselen—cross.)

Mr. Miller: Q. Now, did you make a quantitative analysis of wood dough as to how much castor oil was in it?

A. No. I made a qualitative analysis of wood dough in order to identify castor oil.

Q. And how did you make that analysis?

A. Separated out the castor oil, found that it was an oily substance soluble in alcohol. Most oils are not. And we applied the Elaidian test to it.

Q. And you were able to determine from that that it was castor oil and not cottonseed oil?

A. It behaved similar to castor oil because cottonseed oil is not soluble in alcohol.

Q. And what kind of gum did you find in Wood Dough?

A. I made no analysis for gum.

Q. You do not know whether there is any gum in there or not?

A. No, except from your statement in the answers to the interrogatories.

Q. Now, did you determine from your analysis that [129] any of the Wood Dough contained nitrocellulose filler in more than fifteen parts by weight?

A. It contains cellulose filler, do you mean?

Q. Yes.

A. I am trying to think whether I examined the cellulose filler quantitatively. I haven't my figures with me. I can't answer that question.

Q. You do not know whether the wood filler present was more or less than fifteen parts by weight?

(Testimony of Gustavus J. Esselen—cross.)

A. I can't give you that information.

Q. Now here on page 2 of the Griffiths patent Mr. Griffiths states that a filler, any suitable filling material may be used. What other fillers are suitable besides ground wood flour?

A. I presume one could use sugar cane pith, for example.

Q. How about sawdust, fine sawdust?

A. When sawdust gets down to the consistency of wood flour, yes.

Q. How about straw?

A. Straw I would not consider to be suitable.

Q. How about vegetable powder?

A. I beg your pardon.

Q. Any vegetable powder.

A. I referred to one, such as sugar cane pith, possibly. If you had a finely-divided vegetable powder you would have a substance that was similar to wood flour and could be used.

Q. How about a vegetable fibre?

A. How about what?

Q. A vegetable fibre.

A. A material with an appreciable fibre length I would not consider to be suitable. [130]

Q. How about starch?

A. Mechanically, I presume starch could be used. Because of its solubility in water it would be undesirable to use it.

Q. And how about arrow root?

A. I am not familiar with that.

(Testimony of Gustavus J. Esselen—cross.)

Q. How about ground or pulverized bleached cotton?

A. It might be possible to use that if it were very finely pulverized, and I should not think it would be so desirable as wood flour.

Q. How about cotton flock?

A. That would depend on the cotton flock. Some cotton flock you could use and some you couldn't.

Q. How about cotton linters?

A. Cotton linters would, if used as a filler, make a material which would not smooth out readily. Of course so far as the bulk of filler, it could be used to make a plastic wood. I do not think it would be practicable.

Q. How about corn stalks?

A. Corn stalks particularly the pith, could be used; unless the material were very finely ground it would not be feasible.

Q. Did you ever encounter a composition of that character in which cornstalks were used as a filling material?

A. I have heard of such a material.

Q. And how did that work out? Did it appear to be satisfactory?

A. Well, it was some years since I have seen that product and I really do not recall it.

Q. How about cork powder or pulverized cork?

[131]

A. Well, if you wanted a material which would dry down to the substance of a piece of wood you couldn't use quartz.

(Testimony of Gustavus J. Esselen—cross.)

Q. I am talking about cork.

A. I beg your pardon. I misunderstood you. There, again, it is rather a matter of the degree of the fineness of the grinding. If you get cork flour it ought to work.

Q. When these substances like sawdust and cork are not so very fine, what is the difference in the result of the composition?

A. If the sawdust is too coarse you cannot fill up fine cracks with it.

Q. That is the only difference?

A. And the material, of course, is not so finely grained as the wood flour.

Q. Those are the only differences?

A. Well, there is also a difference in the strength of the resulting product.

Q. Any other difference?

A. Not that I recall at the moment.

Q. What difference is there in the strength?

A. Well, where sawdust is used, unless some adjustment of the proportion of binder, etc., is made, the product is not so dense and inclined to be not so strong.

Q. How about pulverized bark?

A. If finely pulverized, like wood flour, it could be used.

Q. Be quite suitable?

A. Yes.

Q. And paper pulp?

(Testimony of Gustavus J. Esselen—cross.)

A. It would be difficult to make a practical material with paper pulp. [132]

Q. All of these materials are cellulose filler, are they not?

A. For certain purposes.

Q. But they are all cellulose filler?

A. Yes, they are all cellulose filler.

Q. What is the effect, in the Griffiths composition, of adding more filler such as China clay, talc powder, silica and the like as shown in lines 5 to 7 on page 2?

A. Depending, of course, upon the proportion which is added. It has a tendency to make a material which has a somewhat higher specific gravity.

Q. Suppose we add powdered silicate to the composition, as they suggested, that will give the composition a more or less somewhat of a stoney appearance when it dries, isn't that true?

A. It would depend entirely upon the relative proportions.

Q. Well, Mr. Griffiths states what proportions you should use or add?

A. No, he gives rather wide leeway there.

Q. In fact any portion of powdered silicate and wood flour would be bad, as far as he is concerned? Isn't that true?

A. He gives certain preferred proportions which he prefers. He also says that other proportions may be used.

Q. With relation to the powdered silicate?

(Testimony of Gustavus J. Esselen—cross.)

A. He says that may be added, other cellulose material, powdered silicate or the like.

Q. Suppose you have China clay, would that produce a material that was somewhat stony in appearance?

A. I have never tried China clay.

Q. Have you ever tried talc? [133]

A. No.

Q. Have you ever tried powdered silicate?

A. Yes.

Q. Did you get from that a composition which, when it dried, had the appearance of stone?

A. No.

Q. Never did?

A. No.

Q. How much powdered silicate did you add?

A. I don't remember, but it was less than one-half the amount of the wood flour. I remember that.

Q. Less than half of the wood flour?

A. It was a relatively small amount, compared with the wood flour.

Q. Now I believe you testified that there were three essential ingredients in the Griffiths disclosure, nitro-cellulose, solvent and cellulose filler.

A. I think I said a volatile solvent and cellulose filler.

Q. And a mixture of ether and alcohol of course is volatile, isn't it?

A. Yes.

(Testimony of Gustavus J. Esselen—cross.)

Q. Now does Mr. Griffiths state anywhere in his disclosure that the castor oil and ester gum can be omitted?

A. I don't recall that, Mr. Miller.

Q. You believe that a man familiar with these ingredients, that it would be fair to him to leave out those two? That is leave out castor oil and ester gum?

A. I don't know how to answer that question, Mr. Miller, whether it would occur to anyone to do it or not.

Q. Do you believe that it would be obvious to anyone familiar with these materials as you find in the Griffiths [134] patent that, using only such amounts of gum and such as naturally occur in wood flour would tend to give a product slightly less tough and less adhesive than one in which these components are reenforced with a gum and oil?

A. Yes, I believe that.

Q. You believe that a composition with the castor oil and the gum omitted would be one in which all essential properties would be fundamentally the same as a composition in which they were included?

A. The essential properties would be essentially the same. I have seen such samples made in that way.

Q. What do you mean by the "essential properties"?

A. I mean that the material would be of the same consistency of putty or dough and when it

(Testimony of Gustavus J. Esselen—cross.)

dried down it would dry down to a substance having the characteristics of wood.

Q. Do you believe that it would be obvious to anyone that was familiar with nitro-cellulose plastic compositions that if you wished to increase the flexibility and resiliency of the dried mass and to increase the adhesiveness that all they would have to do would be to add some castor oil and ester gum?

A. Yes.

Q. You believe that was true as of 1918?

A. Yes.

Q. In fact, during 1915, 1916 and 1917 castor oil was a well-known ingredient to use in nitro-cellulose plastic compositions to ameliorate the brittleness of the composition, wasn't it?

A. Yes.

Q. And gum, including ester gum, was also a well-known ingredient in nitro-cellulose compositions as a means of increasing the cohesiveness and the adhesiveness of the mass, as of those years. Isn't that true? [135]

A. Well, adhesiveness, yes. The cohesiveness I do not know.

Q. Do you know whether acetone was a well-recognized solvent in place of ether and alcohol, as of those years?

A. As to those years, yes it was.

Q. Now, if you have a compound containing nitro-cellulose, alcohol and ether and finely-divided sawdust or finely-divided vegetable powder you will

(Testimony of Gustavus J. Esselen—cross.)

necessarily have present in that composition some vegetable oil and some resin, isn't that correct?

A. What was the filler you included, Mr. Miller?

Q. Finely-divided sawdust or vegetable powder.

A. If you use dry vegetable powder you do not necessarily. Sawdust, of course, usually contains natural oil and the gum.

Q. Now are there any limits as to the quantities of the ingredients necessary to make a putty or a dough?

A. You mean by "ingredients" the ones mentioned here in the Griffiths patent?

Q. Yes.

A. Yes, you have got to work within certain limits to get a dough.

Q. What are those limits with respect to the wood flour?

A. That I do not know because I have never experimented to see what the limits are. I know that if you follow the directions of the Griffiths patent you will obtain a material which has a doughy, putty-like consistency.

Q. And the Griffiths patent suggests using wood flour not less than fifteen parts by weight, doesn't it, lines 59 and 60 on page 1?

A. He says, "The proportion of filler to the weight [136] of solution", referring to the wood flour filler, "I refer to lies between 15 and 30 parts of filler to 18 and 70 parts of solution." The lower amount given there is fifteen parts. On the other

(Testimony of Gustavus J. Esselen—cross.)

hand he goes on to say, "On the other hand, proportions outside of these limits may be employed."

Q. Have you ever made any comparative test between Duratite Wood Dough and Plastic Wood as placed on the market to determine the relative shrinkage of these two products?

A. Why, I think that example which I offered a while ago would probably be as good a comparison of that as anything. These were identical cracks in a piece of wood and they were filled with the materials under identical conditions and they would show any difference in shrinkage, I should suspect.

Q. Is that the only information you have on the subject as to whether Plastic Wood shrinks more when it dries or whether Duratite Wood shrinks more?

A. That is the only specific test that I recall at the moment, Mr. Miller.

Q. Have you ever made any comparative test to determine the relative fire hazard of the two products?

A. No.

Q. In a composition of this character is it advisable to have a composition which dries rapidly and catches on fire very readily, where it is used for patching wood?

A. Why, if it has the same relative inflammability as wood, I could see no objection to it.

Q. Have you ever made a test to determine whether this Plastic Wood dried and made up from

(Testimony of Gustavus J. Esselen—cross.)

Plastic Wood, as put out by the plaintiff in this action, is more or less inflammable than ordinary wood?

A. I don't remember any such test, Mr. Miller.

Q. Referring to plaintiff's Exhibit 37 I notice a [137] sort of a little crack running down along here, and there are several there in the end. Do you know whether those are shrinkage cracks or not?

A. No, I don't. They look to me as if they were imperfections in the filling of the little mold that was used to make these pieces.

Q. Did you see these pieces made?

A. I didn't see this particular piece made. It was made under my direction.

Q. But you didn't see it made at all?

A. I don't think I saw that particular piece made.

Q. What of this exhibit here, 37, 39, which is this piece, 38, which is this piece, 42, which is the one with a screw in it, and 40 with the three nails in it, and this wood turning, 41, did you see them made?

A. I saw this No. 41 in the process of being made. I saw No. 42 in the process of being made. I saw No. 39 and No. 38 in the process of being made. I don't remember about Exhibit 40.

Q. Did you see any of these that you have identified that you saw in the process of being made where the wood was in a plastic state?

A. The plastic materials from which it was made?

(Testimony of Gustavus J. Esselen—cross.)

Q. Yes.

A. Yes, I saw that being applied and left to dry out. I might explain that this particular piece, No. 39, was made in several layers. I did not see every individual layer that was placed, but I saw the first layer and the last one and I saw the others were applied in between and I supplied the material from which the layers were made.

Q. Will you explain to the court why that exhibit was built up in layers? [138]

A. Because if you tried to make it originally as thick as this piece is the surface here hardens before the center and it is a very difficult job to get the solvent out of the center of the mass.

Q. Have you made any comparative tests between Wood Dough and Plastic Wood as to whether molds can be made large and of considerable volume like that, with both products?

A. Yes, I have made samples of that sort and my experience has been that with Duratite Wood Dough there are more cracks to which you call my attention in Exhibit 37 than there are where the material is made out of Plastic Wood.

Q. How much experience have you had along that line observing these cracks?

A. Well, I have made a few samples which I have here. I have them with me and would be glad to show them if you care to see them, on which my statement is based.

Q. I would like to see them. (The witness produces samples.)

(Testimony of Gustavus J. Esselen—cross.)

Q. Did you make these up yourself?

A. I did not.

Q. Did you see them being made?

A. Yes.

Q. How thick was that Wood Dough when you saw this being made? Was it putty-like?

A. The Wood Dough was of essentially the same consistency as the sample in the can that has been offered in evidence here. In fact, it was taken from a similar can.

Q. And that had wood alcohol and ethyl alcohol in it?

A. I didn't analyze that particular sample.

Q. Do you know anything about the history of that can?

A. Yes.

Q. Where did it come from? [139]

A. I have the cans with me. They are marked. They came from a store I think in Long Beach, California. These are the cans and I have the sales slips that came with them.

Q. Now will you explain to the Court how these two wood turnings that you have prepared here, how these were packed up and forced into the mold or shaped in that manner?

A. They were packed in a small cylinder with the thumb and forefinger pressing it down, exactly as that example, Exhibit 41.

(The two wood turnings referred to by the witness were then marked for identification as Plaintiff's Exhibits 49 and 50.)

(Testimony of Gustavus J. Esselen—cross.)

Mr. Miller: Q. Did you personally pack that down with your finger in the mold?

A. No.

Q. Do you know with what force that was packed in there?

A. No, but it was done by the same man who made the one made of Plastic Wood.

Q. You do not know of your own knowledge whether he packed that down in the mold carefully or not?

A. No, I do not.

Q. Was there any degree of heat applied to this composition from which 49 and 50 were made?

A. I think they were dried at a temperature of about 100°F.

Q. How fast did they dry out?

A. As I remember, it took perhaps from five days to a week.

Q. Why did you subject it to this 100°F. temperature?

A. I happened to have a warm place. It was about that temperature and I placed them there to speed up the drying. [140]

Q. No directions on the can about subjecting the compound to heat to dry it out, are there?

A. No, and there are no directions to say that it won't work on a hot summer's day, which is approximately the conditions that I used.

Q. Did you make more than one turning of Plastic Wood similar to exhibit 41?

(Testimony of Gustavus J. Esselen—cross.)

A. At the time that was made, I did not.

Q. Have you ever made any other wood turning similar to that?

A. Yes, I have made a lot of them.

Q. Did you find any cracks in them?

A. Occasionally but not very often.

Q. Did you find any as bad as this you can see here in this Exhibit 50?

A. I have occasionally seen them as bad as Exhibit 50 but not very often.

Q. Did you make more than one wood turning from Wood Dough, besides these two?

A. Just these two. These are the only ones I made.

Q. Did you have any more turnings made up for you, under your supervision?

A. I did not.

Q. Now, is that nitro-cellulose that you have referred to as being suitable and which contains about 11%—do I understand nitro-cellulose?

A. Yes.

Q. Is that the same kind of nitro-cellulose that was used in wing dope for airplanes, for wings, during the war?

A. I don't remember just the nitro-cellulose content that was used in wing dope. I think that would have been suitable to use; that would have been a suitable grade to use. [141]

Q. These wing dopes contained this nitro-cellulose that had a lower nitration than gun-cotton?

A. Yes.

(Testimony of Gustavus J. Esselen—redirect.)

Redirect Examination

By Mr. Dike:

Q. You have referred repeatedly or there has been repeated reference made in the questions to nitro-cellulose and cellulose filler, both of which I think are referred to in the Griffiths patent. To make absolutely certain that there is no misunderstanding, will you distinguish between the two?

A. The term "cellulose" is the term which refers to a rather complex chemical substance. The purest form of cellulose which occurs in nature is cotton. Cellulose also forms the structural framework of all the vegetable kingdom.

The Court: You are repeating the statement made yesterday or the other day.

A. Cellulose, speaking chemically, is the raw material from which nitro-cellulose is made. Nitro-cellulose is the chemical solvent of cellulose. The cellulose filler refers to a relatively impure form of cellulose, of which wood flour is a typical example, which contains cellulose along with a lot of other things, such as natural oils and gums and lignin.

Q. What is the best cellulose filler, in your opinion, for use in these plastic composition which are under consideration in this case?

A. Wood flour.

(Testimony of Gustavus J. Esselen—recross.)

Recross Examination

By Mr. Miller:

Q. Just how do you designate wood flour, which you say is best? What are the characteristics of wood flour to distinguish it from sawdust, vegetable powders, ground cotton [142] and things of that character?

A. The degree of subdivision and the absence of fibres of appreciable lengths.

Q. Then, the wood flour is nothing more than very fine sawdust? Isn't that true?

A. It is wood which has been ground finer than sawdust.

Q. Just fine sawdust, isn't it?

A. No, because sawdust, strictly speaking, is the dust that comes from a saw, and wood flour is made particularly. It is ground in mills.

Q. Suppose you have a fine-tooth saw that produces a mixture of large wood particles and fine wood particles, and you have a mixture there of wood flour and the large splinters of wood? Isn't that true?

A. Well, it may be, Mr. Miller, but I never happened to see any sawdust that was as fine as wood flour.

Q. But you believe it may be?

A. It may be.

The

DEPOSITION OF LESLIE SOULE

taken on behalf of the plaintiff, together with the exhibits attached thereto, was offered in evidence as follows:

Direct Examination

My name is Leslie Soule and my age is 46. My residence is Dedham, Massachusetts, and my occupation manufacturer. I am Vice President and Works Manager of the Mason-Neilan Regulator Company at Boston. I was employed by The A. S. Boyle Company from August 1930 to August 1931, as Assistant Manager in their Plastic Wood Department. Prior to that time I was with the Addison-Leslie Company of Canton, Mass. I was treasurer and a large stockholder. The business of that company was [143] manufacturing Plastic Wood. I am familiar with the application for Griffiths patent No. 1,838,618, dated December 19, 1931, shown me, but I had not seen the patent itself until today.

(The patent shown to witness was then offered in evidence as Plaintiff's Exhibit 1, a copy of which is reproduced in the Bk. of Exhibits.)

The Addison-Leslie Company was formed specifically to manufacture and sell Plastic Wood as described by Exhibit 1. It was organized in May 1925. Prior to that I was interested in a local selling company which had handled the sale of Plastic Wood in New England. I believe it took on the sale of Plastic Wood in December 1924 or January 1925, for New England. I first heard of Plastic Wood

(Deposition of Leslie Soule—direct.)

through a friend of mine in New York who was an officer of C. Tennant & Son and Harrison-White, Inc. I understand that C. Tennant & Son Company or Harrison-White, Inc. had brought information concerning this material from England. My knowledge of this material was some time in the Fall of 1924. I first secured the right to sell this material in New England. Later, in May 1925, I formed the Addison-Leslie Company and secured a license to manufacture this material for the United States. Before the formation of the Addison-Leslie Company this material was manufactured by the Frankel Chemical Company at Jersey City, New Jersey.

I did not obtain any of the material from England. The Addison-Leslie Company began to manufacture the material for itself in December 1925. It marketed its product under the name "Plastic Wood." Here is a sample of the Plastic Wood packed in a tube. (The sample was then offered in evidence as Plaintiff's Exhibit 2, forwarded as a physical exhibit.)

The can which I have here is similar in all respects to packages made by the Addison-Leslie Company, but was made after The A. S. Boyle Company had taken over the Addison- [144] Leslie Company. (The can produced by the witness was offered in evidence as Plaintiff's Exhibit 3. It is forwarded as a physical exhibit.)

(Deposition of Leslie Soule—direct.)

The formula employed by the Addison-Leslie Company in the manufacture of its material sold under the name of "Plastic Wood" is celluloid scrap, 13 parts by weight; methyl acetone, 23 parts by weight; toluol, 23 parts by weight; denatured alcohol, 7.7 parts by weight; castor oil, 3.3 parts by weight ester gum, 6.5 parts by weight; wood flour, 23 parts by weight. The celluloid scrap was dissolved in the mixture of acetone, alcohol and toluol. Then, ester gum and castor oil were added before the celluloid scrap was dissolved. When the mixture was thoroughly dissolved the required amount of wood flour was added gradually and the complete mass thoroughly mixed until it was homogeneous. The consistency was that of a thick paste. I should like to add to my previous answer. The consistency of Plastic Wood is heavier than paste, but it can be kneaded in the hand. On exposure to air, Plastic Wood hardens to the consistency of soft wood-like pine.

The effect of castor oil on the final product is to make the product slightly elastic and resilient and increases its strength. The ester gum increases the adhesion of Plastic Wood to any base to which it may be applied. We have one or two small batches of the Griffiths composition, omitting the castor oil and the ester gum, using only the three ingredients, viz., the solvent, wood flour, and the nitro-cellulose or film scrap. Such material, in appearance, was identical with our regular material that contained

(Deposition of Leslie Soule—direct.)

ester gum and castor oil but it was more brittle and did not have as good adhesive qualities. It was, however, a practical and useful material. It was essentially the same as Plastic Wood and could be used, but it was not so satisfactory as the material containing the ester gum [145] and castor oil.

Plastic wood is generally used for repairing defects in finished wood, such as knot holes, dents, and cracks in all kinds of cabinet work. It has been used for repairing dents and replacing splinters which chip off furniture through bad handling. It is used extensively in the manufacture of wood patterns and also metal patterns by filling dents or making minor alterations in the contour of patterns and core boxes.

It is also used extensively by automobile body builders for filling in irregularities on the tops of bodies before the top is put on. In this respect, Plastic Wood is sometimes smeared over on the top of the frame to cover any irregularities and then the top itself is put on while the Plastic Wood is still soft. In this way, Plastic Wood makes a perfect joint between the frame and the top. It is also used to cover bolt heads and rivet heads.

In boat building, Plastic Wood has a variety of uses such as covering holes in place of the wood plugs which had previously been used where fasteners are countersunk. Among the most important uses of Plastic Wood are boat repairs such as replacing rotten stems and keel so that a new plank

(Deposition of Leslie Soule—direct.)

can be attached against the rebuilt surface and be water tight. It is also used for repairing chafed planking to the original surface contour. In the shoe industry, Plastic Wood is used for repairing shoe lasts and for remodeling last models.

Plastic wood has been used extensively for repairing all kinds of furniture, such as school desks which have been carved by pupils with jack knives. Perhaps, the most general use of Plastic Wood is in the home where it has a great variety of uses for repairing all kinds of home furniture, building boat models, etc.

It has been used for repairing stair treads which have [146] torn or split off at the end. For remodeling gun stocks and repairing bird decoys. It has also been used quite generally in automobile repair shops for repairing automobile bodies where the original woodwork has rotted away or has been damaged in accidents. It is also used to fill dents in damaged fenders and bodies. The Plastic Wood is applied to the metal and then sanded down to the original contour. In these cases repairs have been made and after the paint has been applied the repair is invisible.

Plastic Wood will adhere to a clean metal surface and when properly applied, can only be removed by chipping and filing. Plastic Wood in appearance, after hardening, is like real wood and as we manufacture it of about the hardness of white

(Deposition of Leslie Soule—direct.)

pine, but it has no grain structure. It will not split or crack under ordinary usage such as boring holes or driving nails or screws. In that respect it is superior to ordinary wood. It can be worked with all kinds of woodworking tools exactly like real wood and does not have a tendency to crack which real wood has. I have here a bar of Plastic Wood about two feet long about two inches in diameter which has been turned up in a woodworker's lathe.

(This was offered in evidence as Plaintiff's Exhibit 4 and is forwarded as a physical exhibit.)

I have a small sample of Plastic Wood about one and one-half inches in diameter by two and one-half inches long. This sample shows how Plastic Wood can be sawed, drilled, planed, and how it holds nails and screws. It also indicates by the insertion of a machine screw that it can be threaded and hold the thread with considerable strength. Our experience indicates that Plastic Wood holds nails and screws better than ordinary soft wood, and probably as well as hard wood. (The last sample referred to by the witness was offered [147] in evidence as Plaintiff's Exhibit 5. It is forwarded as a physical exhibit.)

I have here three samples of heavy sheet steel such as is used in automobile bodies. These pieces have been dented and the dents filled with Plastic Wood. One sample shows the Plastic Wood in a semi-finished state with the original priming coat of paint applied. The other sample shows the finished

(Deposition of Leslie Soule—direct.)

job after the application of lacquer and paint to the metal. These pieces also indicate the remarkable adhesion of Plastic Wood to metal. (The three samples were offered in evidence as Plaintiff's Exhibits 6, 7, and 8, and are forwarded as physical exhibits.)

I have here two lasts used in the manufacture of shoes. One of them shows how tacks penetrated the sole of the last, wearing it away. The other specimen shows a similar last which has been repaired with Plastic Wood. (The two lasts were offered in evidence as Plaintiff's Exhibits 9 and 10, and are forwarded as physical exhibits.)

Plastic Wood is used in the manufacture of last models for building up portions where the last maker has cut away too much of the wood. This use enables the last maker to save a last which would otherwise be useless. Plastic Wood is also used for re-shaping finished last models when it is desired to make slight changes in the shape. (The witness produced a last which was offered in evidence as Plaintiff's Exhibit 11, forwarded as a physical exhibit.)

This exhibit shows a section of a boat stem which had rotted away and the defective portion had been rebuilt with the original form by Plastic Wood. This was used by Addison-Leslie Company as a demonstration of the use of Plastic Wood in various exhibits, such as the Motor Boat Show in New York. (The exhibit was then offered in evidence as [148])

(Deposition of Leslie Soule—direct.)

Plaintiff's Exhibit 12, forwarded as a physical exhibit.)

This exhibit is another demonstration of the use of Plastic Wood for repairing chafed planking on a boat. To the best of my recollection, this exhibit was used in the New York Motor Boat Show in January 1929. (The exhibit last referred to was offered in evidence as Plaintiff's Exhibit 13, forwarded as a physical exhibit.)

This model represents a portion of the rim of a boat with a section of planking attached. It shows the use of Plastic Wood for covering the heads of countersunk nails. (The model was offered in evidence as Plaintiff's Exhibit 14, forwarded as a physical exhibit.)

At the time I put the Griffiths Plastic composition on the market, as far as I know there was no other material which would perform substantially the functions of the Griffiths composition. There was no other material which could be compared in any way with Plastic Wood to my knowledge. The nearest was ordinary lead putty and certain mineral fillers. They were the only things on the market, to my knowledge, and they cannot be compared with Plastic Wood.

The Griffiths composition has replaced putty and mineral crack fillers, and in furniture work has replaced stick shellac. The sales of Plastic Wood made by the Addison-Leslie Company annually are as follows:

(Deposition of Leslie Soule—direct.)

May 25, 1925 to	
December 31, 1925	\$ 12,759.00
1926	58,024.00
1927	140,449.00
1928	258,464.00
1929	378,965.00
1930	379,602.00

This last year includes four months after the Addison-Leslie [149] had been purchased by The A. S. Boyle Company. I was with the company until August 1931 and the comparative sales for 1931 dropped off materially as compared with 1930. I attribute a good deal of the drop of sales to the appearance of a great many products similar to Plastic Wood. The first competitive product, as well as I can recall, was known as Fillitt. I think this appeared sometime in the latter part of 1926. I have here a sample of Fillitt manufactured by Patent Devices, Inc., Chicago. This was manufactured by a man who tried to secure the right to the Griffiths application and who for a period acted as an agent of the Addison-Leslie Company in Chicago. (The can of Fillitt was introduced in evidence as Plaintiff's Exhibit 15 which is forwarded as a physical exhibit.)

Q. 58. Since that time what other substitutes have been on the market which have the same general nature?

Mr. Miller: I will object to the introduction of this can of Fillitt and also to quite a number of cans

(Deposition of Leslie Soule—direct.)

of competitive material that were introduced in the exhibit, as not being in issue in this case.

The Court: What is the purpose?

Mr. Dike: To support the patent, because of the public recognition due to the imitations.

The Court: Objection overruled.

Mr. Miller: Exception.

The Court: Exception allowed.

I should say fifteen or twenty products appear on the market. I have here exhibits of competitive materials. (The following exhibits were then introduced in evidence and are forwarded as physical exhibits.)

Peel-Lex Wonder Wood, Plaintiff's Exhibit 16, manufactured by Peel Manufacturing Company, Cambridge, Massachusetts. [150]

Magic Wood, Plaintiff's Exhibit 17, manufactured by Leham Bros., Jersey City.

Dandy Wood Putty, Plaintiff's Exhibit 18, manufactured by Dandee Manufacturing Co., Fremont, Ohio.

Arco Dum-Dum Plastic, Plaintiff's Exhibit 19, manufactured by the Arco Company of Cleveland, Ohio.

Cornstalk Plastic, Plaintiff's Exhibit 20, manufactured by Cornstalk Plastic Company, Ames, Iowa.

Wood Dough, Plaintiff's Exhibit 21, manufactured by the Harris-Thomas Company, Roxbury, Mass.

(Deposition of Leslie Soule—direct.)

Plastosa Pliable Wood Paste, Plaintiff's Exhibit 22, manufactured by G. J. Liebich Co., Chicago, Ill.

Three Star Wood Cement, Plaintiff's Exhibit 23, manufactured by the Wood Chemical Co., Boston, Mass.

Fixit Mending Wood, Plaintiff's Exhibit 24, manufactured by Lewis & Freman, Cleveland, Ohio.

Horne's Patch Wood, Plaintiff's Exhibit 25, manufactured by A. C. Horne Co., Brooklyn, New York.

There were others of which I am able to produce specimens including Handy Wood, manufactured by the Creo Dipt Company, Towawonda, New York; Wood Amalgum, Wood Amalgum Company, Bloomington, New Jersey; Patching Wood, Sheffield Bond Powder & Stencil Company, Cleveland, Ohio. There were several other products of the same nature but at this time I am unable to remember their name nor the manufacturer.

The Addison-Leslie Company advertised in some of the hardware trade papers and ran small advertisements in such magazines as Saturday Evening Post, Popular Mechanics, Good Housekeeping, and some of the other magazines. We also did some direct mail advertising to the retail hardware stores. I cannot recall the actual figures as to how much money was expended in advertising, but I believe in 1929, which was the [151] last year I was in control of the company our advertising expenditure was approximately \$40,000.00.

(Deposition of Leslie Soule—cross.)

Cross Examination

By Mr. Thomson:

I have no definite figures on the amount of Plastic Wood manufactured by Frankel Chemical Company, but it is my understanding that the manufacture was very limited and was done for Harrison-White Inc. of New York City, who had the rights under the Griffiths patent application for the United States. It was for Harrison-White Inc. that Addison-Leslie Company secured these rights. I believe that Harrison-White Inc. was engaged in the business of making or having Plastic Wood made six to eight months prior to January 1925. I am sure that Frankel Chemical Company did not advertise the product as they were merely manufacturing the product for Harrison-White. Harrison-White may have done a small amount of advertising to the pattern makers trade.

Harrison-White Inc. took over the rights of Plastic Wood with a view of selling them to a manufacturer as their business is, generally speaking, the promotion of new products. For this reason, they did not develop a substantial sale.

The formula I have previously given was consistently used by Addison-Leslie Company during its manufacture of Plastic Wood with the exception that originally benzol was used instead of toluol. The Addison-Leslie Company changed from benzol to toluol due to the hazard of benzol poisoning its employees. Benzol, aside from the hazard, is pref-

(Deposition of Leslie Soule—cross.)

erable to toluol because it is more volatile. As far as I know. Frankel Chemical Company used the same formula with the substitution of benzol for toluol because Frankel Company received the formula from Harrison-White Inc. [152]

During my connection with The A. S. Boyle Company the formula was not changed as far as I know. I do not know whether there has been any change in the Plastic Wood formula since August 1931. As far as I recollect no Plastic Wood was sold which varied substantially from the formula. I have previously given. Small batches manufactured without ester gum and castor oil were only experiments.

The testimony I have given as to the manufacture and sale of this composition and its uses and advantages relate to the preparation which was manufactured by Addison-Leslie Company. Plaintiff's Exhibits 4 to 14 probably date back to 1927 or 1928. Some of them were used for exhibits in the New York Motor Show and similar shows and some were prepared as salesmen's samples. I assume they have been in the possession of the A. S. Boyle Company since that time. The samples of boat construction were made for the Addison-Leslie Company and I assume that the others were made by the Addison-Leslie Company at Canton as they are identical with exhibits which we made up.

My statement of the reason for the drop in the sales of Plastic Wood by Addison-Leslie Company and by The A. S. Boyle Company is a matter of

(Deposition of Leslie Soule—cross.)

opinion based upon fact that we had a great deal of competition from competing products, most of which were sold at a price substantially lower than the price for a similar amount of Plastic Wood. Lead putty, minerals, crack fillers, and thick shellac are still used to a very considerable extent in the painting and furniture trade. I cannot say definitely but I should think that all of the competitive products I have mentioned came out prior to 1930.

The advertising of Addison-Leslie Company included display cards used in dealers' stores.

Addison-Leslie Company sold its rights under the [153] Griffiths application and to the preparation known as Plastic Wood to The Boyle Company in or about August 1930, when I became Assistant Manager of the Plastic Wood Division of that company.

Redirect Examination

By Mr. Dike:

The particular purpose of the advertising done by the Addison-Leslie Company was to acquaint potential users of Plastic Wood with what we considered to be an entirely new and revolutionary product. We had to find the field for marketing of the product and to acquaint the potential users with the fact that there was such a product. The price paid by The A. S. Boyle Company for the Addison-Leslie Company was \$720,000.00 market value in August 1930.

(Deposition of Leslie Soule—recross.)

Recross Examination

By Mr. Thomson:

The Addison-Leslie Company was manufacturing a product known as "Rug-Stay" for preventing rugs from slipping on hardwood floors. The volume of sales of this product was negligible. The Company also manufactured a product known as Canton Crack Filler which was a mineral crack filler. The sales of this product were also unimportant.

The A. S. Boyle Company continued the business of selling Rug-Stay or Canton Crack Filler I believe.

Attached to the deposition is a stipulation that payments of advertising were as follows:

May 25, 1925 to Dec. 31, 1925	\$ 1,533.45
The year 1926	9878.77
The year 1927	21,246.46
The year 1929	74,134.88
	[154]
The year 1930 until August	84,000.00
From Sept. to December	21,000.00
Total	\$95,000.00

WALTER SILBERSACK

called on behalf of the plaintiff testified as follows:

Direct Examination

By Mr. Dike:

My name is Walter Silbersack. I am President and General Manager of The A. S. Boyle Company. I am 34 years of age and reside at Cincinnati, Ohio. I have been connected with The A. S. Boyle Company, the plaintiff in this action since January 1, 1923. I worked originally as advertising manager, later as sales manager, and since 1927 I have been general manager and president.

The Boyle Company purchased the Griffiths patent from the Addison-Leslie Company of Canton, Massachusetts.

I heard the Soule deposition read and the statement that the price paid for it was \$720,000.00. That is correct.

Plaintiff's Exhibit 36 is a can of Plastic Wood and is one of a group of cans shipped out of our regular commercial stock that we carry for shipping to the trade. We sent this to Dr. Esselen. The formula of Plastic Wood as we make it now and as we have made it from the time we bought it is 382 parts of film solution, 19½ parts of castor oil, 35 parts of ester gum, and 118 to 130 parts of white pine wood flour.

In our contact with the hardware and paint trade we saw the product Plastic Wood spring up in the trade where it sold very rapidly with comparatively

(Testimony of Walter Silbersack—direct.)

a small amount of advertising and a small sale force. It made us feel that the product had a wide market so we asked the [155] Addison-Leslie Company whether they would sell it.

In my contact with the hardware trade I know of no other product which was sold for that same purpose by the trade. I contacted the hardware trade more or less regularly as sales manager from Maine to California.

In 1931 the sales approximated \$298,000; in 1932 they approximated \$209,000; in 1933 they approximated \$206,000; in 1934 they approximated \$278,000; in 1935 they approximated \$309,000. From September 1930 to December 1930 the figures for advertising were \$21,000.00; for 1931, they were \$69,000; for 1932 they were \$32,000; for the year 1933 they were \$36,000; for 1934 they were \$66,000; for 1935, from January up to the end of November they were \$67,000. The number of pieces or containers or units of Plastic Wood that have been sold are between two and two and one-half million.

Plastic Wood is sold in tubes and in cans. In tubes it is sold in a 10¢ size and 25¢ size. In cans, it is sold in quarter pound sizes, one pound sizes, five pound and twenty pound drum.

(The plaintiff then offered in evidence a certified copy of the Bill of Complaint in the case of Manfred E. Griffiths and the Addison-Leslie Company vs. Thomas E. Robertson, Commissioner of Patents No. 50,184.)

(Testimony of Walter Silbersack—direct.)

Mr. Miller: If you are going to make an offer of that character, the whole file history go in, leading up to that suit.

I still wish to make my objection that I made to the bill of complaint, answer and decree, which proceedings went in before that court that gave rise to the patent. It may be it will be introduced in support of the decree and how that happened to be granted.

The Court: Objection overruled. Admitted.

[156]

Mr. Miller: Exception.

The Court: Allowed.

(The bill of complaint was admitted as Plaintiff's Exhibit 51, and is reproduced in the Bk. of Exhibits.)

The plaintiff then offered a certified copy of the answer in this suit.

Mr. Miller: The same objection.

The Court: Overruled, admitted.

Mr. Miller: Exception.

(The answer was then admitted as Plaintiff's Exhibit 52 and is reproduced in the Bk of Exhibits.)

The plaintiff then offered a certified copy of the findings of fact and conclusions of law in that case.

Mr. Miller: The same objection.

The Court: Overruled. It will be admitted.

Mr. Miller: Exception.

(Testimony of Walter Silbersack—direct.)

(The certified copy of the findings of fact and conclusions of law were admitted as Plaintiff's Exhibit 53. They are reproduced in the Bk. of Exhibits, page 17.)

The plaintiff then offered a copy of the decree in that case.

Mr. Miller: The same objection.

The Court: Objection overruled. It may be admitted.

Mr. Miller: Exception.

(The copy of the decree was admitted as Plaintiff's Exhibit 54. It is reproduced in the Bk. of Exhibits, page 22.)

A certified copy of a decree in Cause No. 4182, U. S. District Court, Northern District of Ohio, The A. S. Boyle Co., plaintiff, vs. Sheffield-Bronze Powder & Stencil Co., defendant, was admitted as plaintiff's Exhibit 55. [157] (It is reproduced in the Bk. of Exhibits, page 43.)

A certified copy of a decree in Cause No. 2210, U. S. District Court, District of Connecticut, The A. S. Boyle Co., Plaintiff, vs. Yale Rose and Charles M. Rose, doing business as Yale's Hardware Store, Defendants, was admitted as Plaintiff's Exhibit 56. (It is reproduced in the Bk. of Exhibits, page 47.)

We notified all the companies manufacturing products that we thought were within the scope of the patent immediately when the patent was issued. Here is a partial list of some of those who have agreed to discontinue manufacturing:

(Testimony of Walter Silbersack—direct.)

Arco Synthetic Wood, made by Arco.

Handi Wood, made by Creo Dipt. Co. [158]

Dandee Wood Putty, made by Dandee Mfg. Co.

Flexwood, made by General Paint Co.

Patchwood, made by A. C. Horn Co.

Plastic Wood, made by Imperial Laboratories.

Patching Wood, made by Janney-Sample Hill
Co.

Limber Wood, made by Limber Products Co.

Dum Dum, made by Miami Rubber Co.

Workable Wood, made T. H. Nevins.

Renew Wood, made by Northern Hardware Co.

Wood Paste, made by Oakley Paint Manufac-
turing Co.

Patching Wood, made by Tieman Stove & Hard-
ware Co.

Tilette Canned Wood, made by Tilette Co.

Wood Plastic, made by Tinker Wood Works.

Tremco Plastic Lamber, made by Tremco Man-
ufacturing Co.

Patching Wood, made by Shapleight Hardware
Co.

Fixit Mending Wood, made by Wallace Paint
& Varnish Co.

Magic Wood, which was sold by Woolworth
Company.

We have granted a license to the Creodeek Com-
pany for the manufacture of Kneaded Wood. They
paid us a royalty and a back royalty on the products
they sold before they were granted a license.

(Testimony of Walter Silbersack—direct.)

Carpenters and painters are quite large users of Plastic Wood. Many carpenters carry it in their kits all the time. Carpenters find it particularly useful because practically all the tools they carry in their kits are tools for taking off wood. Plastic Wood is one of the few items they have for putting wood on—or the only item they have, I should say.

The A. S. Boyle Company put the patent number on all cans and tubes just as soon as the patent was granted. This appears on Plaintiff's Exhibit 36. When the patent was granted we ran a full page advertisement calling attention to the [159] patent in many of the leading hardware and paint trade journals.

Cross Examination

By Mr. Miller:

I was not connected with the Addison-Leslie Company prior to its being purchased by The Boyle Company.

The physical assets that the Addison-Leslie Company had was the building, a certain amount of machinery, a very limited amount of office equipment, and in addition to the patent they had a trademark and a certain amount of goodwill. They had two other products mentioned by Mr. Soule in his deposition which were very new and had practically no particular sale. Rug-Stay had just been started. We are still selling it but not in large quantities. We do practically no advertising on Rug-Stay but

(Testimony of Walter Silbersack—cross.)

we do a *tremendous* for our Old English Wax. The advertising of Rug-Stay is very small compared with the advertising of our Old English Wax. On my personal card of the company, Plastic Wood and Rug-Stay are advertised in the same size type and on the same line.

The advertising I have just referred to as having been run in the trade journals is of the character appearing on the back of the Hardware World for August 1933. I think this appeared in four or five or six or seven publications. I do not know what kind of an injunction was granted against the companies that I said had been enjoined in my direct examination. I know that an injunction was granted.

Q. Against who?

A. I know we were notified by our attorneys that an injunction was granted.

Q. That is all you know about it?

A. That is all I know about it.

As to the action against Sears Roebuck, my records do not show an injunction but show it was discontinued without [160] prejudice and after settlement they paid damages to us. I got that information from our attorneys. I presume I saw a decree in that case similar to this copy, I don't recall it.

(It was then stipulated that the copy of the decree in the Sears Roebuck case was a true and correct copy. It was offered in evidence and admitted as

(Testimony of Walter Silbersack—cross.)

Defendant's Exhibit 1. It is reproduced in the Bk. of Exhibits, page 49.)

My recollection is that Sears Roebuck paid us a sum based on the merchandise they had sold. This is to the best of my recollection. I could look it up and make sure but I am very sure that that is the way it was settled. I don't recall the exact amount they paid us. As to whether they paid us anything or not, my recollection is that they did. I think what they paid us was based on so much per piece or per can, but I am not sure about it.

The Western Auto Supply Company case was settled by agreement of counsel according to my records. The settlement was left with our attorneys. I know nothing about it except what our attorneys told me. I don't recall how much they paid. I think it was about \$700.00, but I am not positive of the exact amount.

As to the Sheffield case, my record doesn't show that that case was settled by agreement of counsel. It is marked "Injunction granted and consent decree."

I never attended a trial before in which this patent was involved and alleged to be infringed.

As to the Yale Hardware Company, my record shows that an injunction was granted. I know there was a court case. I know a trial was set. My understanding was that there was actually a trial but I wasn't there. I don't know how much the Sheffield

(Testimony of Walter Silbersack—cross.)

people paid us. I don't think the Yale Hardware people paid anything. [161]

We have quite a large number of salesmen out. It is the custom of our advertising department to supply the salesmen with samples of all advertising. I presume they secured a copy of the advertising that appeared on the back of the Hardware World. I recognize this as being a reprint of that advertisement. I presume the salesmen were supplied with it from the advertising department the same as they are proofs of all our advertising. I don't exactly know whether that particular reprint was sent out to the salesmen. I imagine they did have reprints just exactly like this.

(The reprint was offered and received in evidence as Defendant's Exhibit A-2, reproduced in Book of Exhibits, page 51.)

We do not have any school or any training to enable these salesmen to inform them as to what compositions are an infringement of the Griffiths patent and what are not.

I don't know whether any of our salesmen at any time since The Boyle Company owned this patent went into jobbers of competing products and left copies of this reprint with them. I do not know whether any of our salesmen threatened jobbers handling competing products with infringement suits. I have not made any investigation to determine the activities of our salesmen in that regard.

Defendant's Exhibit A-2 was prepared by our advertising agency. I approve of it.

(Testimony of Walter Silbersack—cross.)

I would have to look up the records in Cincinnati to inform the Court which three suits were brought in each of which the infringer was enjoined and ordered to pay damages as stated in that advertisement. I would have to look up the records to see which one we referred to at that time as being the fourth suit settled by the defendant acknowledging the validity of the patent and paying damages.

This little reprint shown to me looks like a reproduction [162] of the other taken out of one of our trade mailings. We have mailed these small reprints out to the hardware trade generally. The last one, I recall, was in this blue list here which went out to the trade this Spring. I believe that is where it is taken from. Is that it? I guess that is about the same. The entire book was mailed out and that reprint is taken from this book. We mailed out this large booklet to the various hardware and paint stores. I believe we restricted mailing of this book to our own customers. Normally, we do not. I don't recall any other booklet than this one which went out this Spring. About 50,000 of them were put out. I don't know how many of these reprints similar to Defendant's Exhibit A-2 were printed.

I can't say exactly what our salesmen do in calling on the trade except I know we do not ask them to warn competitors against using competing products or against infringing this patent. If it was done, it was done without our authority because the warn-

(Testimony of Walter Silbersack—cross.)

ings that we sent out we considered sufficient. I have not heard of it being done. I have not heard about certain jobbers quitting the use of competing products and taking on our product following a warning made by one of our salesmen. I have known them to take it off following advertisement which we ran. I approve of this statement appearing in the advertisement: "This announcement is a warning to the trade that the manufacture or sale of any wood base putty containing nitro-cellulose, solvent and wood filler or their equivalent is an infringement of this patent."

I don't know whether a warning letter was sent to the Pacific Marine Supply Company, the defendant in this action, because these letters were sent out by our attorneys. I haven't any list here of exactly who it went to. I would have to look up the carbons of letters sent out by the attorneys [163] to know whether a warning letter was sent to the intervener, Webb Products Co., Inc. I don't think I personally corresponded with Webb Products Inc. before this action was started. I don't recall any letters that I wrote. I haven't sent out any letters as a warning to competitors. These letters were sent over the name of our attorneys.

The letter shown to me dated July 17, 1933, I recall.

(The letter was offered and received in evidence as Defendant's Exhibit A-3, and is reproduced in the Bk. of Exhibits at page 53.)

(Testimony of Walter Silbersack—cross.)

Mr. Dike: I will ask counsel to produce the letter to which that was a reply.

Mr. Miller: I believe I have it. Yes, here it is.

Mr. Dike: We offer it.

The Court: **Admitted.**

(The letter to which Defendant's Exhibit A-3 is a reply was admitted in evidence and marked Defendant's Exhibit A-4. It is reproduced in the Bk. of Exhibits at page 54.) The film solution that I referred to in the formula of Plastic Wood is nitro-cellulose and solvent combined. The solvents are the same solvents which Dr. Esselen gave in his testimony. I think they are acetone, toluol, and alcohol. I don't know the exact proportion. I do not know the proportion of nitro-cellulose to the entire amount of solvent because in working, all that I work with is the formula that we use. We refer to it as film solution. I was aware that the Pacific Marine Supply Company was selling the product of the Webb Products Company at the time this suit was brought. I did not think the Pacific Marine Supply Company was manufacturing any competing composition to its own. I had nothing to lead me to believe that they were manufacturing one.

The largest amount of advertising on which I have [164] given figures is spent in running advertisements in such publications as the Saturday Evening Post, Collier's, Liberty, American Cookery.

(Testimony of Walter Silbersack—cross.)

The greatest proportion of the total sum is in that form of advertising. Sometimes the volume of sales we have made corresponds to the amount of advertising we have spent and sometimes it does not. In 1931 when we spent \$69,000 for advertising, we did \$298,000 worth of business. When we dropped down in 1932 to \$32,000 for advertising, our sales were off that year. In 1933, the sales stayed practically the same as the previous year, and in 1933 we only spent \$36,000 for advertising. When we started spending \$66,000 again our sales increased.

I have been given a list of concerns putting out competing products who have indicated to us that they were going to quit. I have not a list with me of concerns that are putting out competing products that are still putting out those products. I have such a list in the office. I would think offhand that there would be somewhere around a dozen or a dozen and a half of such concerns located in various localities throughout the United States. I don't recall any of them close to Cincinnati. I do know of a competing product being put out in Cincinnati. It is called Can-a-wood. It does not contain, to my knowledge, nitro-cellulose, solvent and wood filler. I don't know the exact contents but it is my understanding that it is not a nitro-cellulose product nor a cellulose acetate product. I know that the solvent is water and it is my understanding you cannot have nitro-cellulose or cellulose acetate with a water solvent.

(Testimony of Walter Silbersack—cross.)

I don't know whether Cornstalk Plastic is still being manufactured or not. I believe they are located in Iowa.

I never heard of Plastosa Pliable Wood Base.

Fixit and Mending Wood of Cleveland, Ohio have [165] agreed to discontinue. We haven't any evidence to the contrary.

I did not have Wood Amalgam on my list. I did not know if they are still in business. I never heard of the Celluloid Company putting out a product competing with liquid wood.

I know that Mr. Kritehevsky and Carl Schultz of Chicago, Illinois, who obtained a patent that we tried to get an interference with are not putting out a competing product.

I haven't seen Magic Wood lately. The only place I ever saw that product was in Woolworth's, and it is no longer there.

I can't say that our own product is sold by Sears now at a much lower price than it is sold at the hardware stores. I was in Sears Roebuck store in Tacoma this week and our cans were selling for 35¢. I don't know whether this is true generally throughout the United States.

I don't know whether this Kelex Wonder Wood is still in business. Dandy Wood agreed to discontinue and we have no evidence to the contrary. I do not know that they have, but I have no evidence or information that would lead me to believe otherwise. They definitely agreed to discontinue the product

(Testimony of Walter Silbersack—cross.)

and until I see evidence of a sale, I take it for granted that they have.

The Arco Manufacturing Company agreed to discontinue. The makers of both Dum Dum and Arco Dum Dum as I recall it both agreed to discontinue.

As to Three Star Wood Cement, I have no record of them among those that agreed to discontinue. They may still be in business. I have no evidence from any of our sales force of having seen any of it recently.

Fixit Mending Wood agreed to discontinue. We have had no evidence to the contrary or that they are still selling. [166]

Horne's Patching Wood agreed to discontinue. We have no evidence otherwise.

Our salesmen are instructed to send us samples of competing products on the market. The dozen and a half concerns that are still manufacturing are pretty generally scattered. I would say most of them are scattered in the East and Middlewest.

As to why this suit was not instituted directly against the Webb Products Company instead of Pacific Marine Supply Company was left entirely to our attorneys. I don't know why he chose Pacific Marine Supply Company. I do not know whether any of our salesmen called upon Mooseheart-Schleeter Company of Houston, Texas, and threatened that concern with an infringement suit if they continued to sell competing products. I do not know whether any of our salesmen ever called upon the

(Testimony of Walter Silbersack—cross.)

Pittsburgh Plate Glass Company of Los Angeles, California, and made a threat of patent infringement. Nor do I know whether such a threat was made against the California Hardware Company of Los Angeles. I know we called on them—I called on them. I did not notify them that we had the patent. I don't recall any conversation regarding the patent. I do not know anything about our salesmen calling upon the Huffman Hardware Company in Los Angeles. I called on them and telephoned. I did not mention any patent to these concerns. I did not leave any of our reprints. They may have been mailed to them, I can't answer as to that. I do not know whether any of our salesmen called on Pickering Lumber Sales Company of Kansas City, Missouri, and left reprints with them.

Q. In fact, there are just about as many concerns who have disregarded the patent and continued to manufacture in defiance of it as there are who have to discontinue? Isn't that true?

A. I do not think the number of companies manufacturing [167] today is as large as the number who have agreed to discontinue.

Q. That is the number that is manufacturing today?

A. The ones that I know of are all manufacturing today.

The number that have agreed to discontinue exceeds the number that are manufacturing that we know about. There may be some we don't know

(Testimony of Walter Silbersack—cross.)

about. None of the concerns ever informed us when they agreed to discontinue, that the competition against advertising of that character was too stiff for them to continue in business.

(The plaintiff then offered letters marked for identification Plaintiff's Exhibit 57, forwarded as a physical exhibit.)

Mr. Miller: I wish to object to the introduction of these letters as obviously it is merely a proposal to compromise any differences of opinion as between the intervener, Webb Products Company, and this concern.

The Court: What is the purpose of it?

Mr. Dike: The purpose is to show that the defendant asked for a license as a part of the negotiations, which he brought out himself.

The Court: Objection sustained.

Mr. Dike: Exception.

The Court: Allowed. [168]

The A. S. Boyle Company purchased the Addison-Leslie Company and took over this patent application in 1930. When we bought it, I made a very careful résumé of it and we were negotiating with the company and then we turned it over to the attorneys to carry on from there.

I knew in 1930 that the application had been denied with the exception of one or two narrow claims that are not even in issue in this case.

Q. And you considered the fact that the exam-

(Testimony of Walter Silbersack—cross.)

iner had denied the application, in establishing a purchase price, did you?

A. We took it to our attorneys and they assured us that we could very likely secure the patent.

I don't know that I personally looked over the record of the application and saw that it was denied by the Examiner at the time we purchased it but I read the attorney's opinion. I think I knew at that time that the Board of Appeals in the Patent Office had turned the application down.

Q. And with an application that had been denied by this tribunal in the Patent Office, you say that was the principal asset worth half a million dollars?

A. We relied on our attorneys' opinion that the patent still would be granted.

Q. And just what was the trade-mark "Plastic Wood" valued at in your arrival at the price of \$720,000?

A. We made no calculation trying to divide between physical assets, trade-marks or patent.

I didn't say that we merely wrote off the trade-mark "Plastic Wood" as having no value at all. I said we made no calculations trying to arrive at a division as to what part was patent, trade-mark or physical assets or goodwill. It is rather difficult to answer how we arrived at the price of [169] \$720,000 because an agreement to purchase of that size and kind and character is usually a matter of gradual agreement on both sides.

(Testimony of Walter Silbersack—cross.)

Q. Was the trade-mark "Plastic Wood" valued at any time?

A. I would certainly say it was.

I wouldn't say that it was the most valuable asset but that it was of value. I wouldn't say where to put the proportions as between the trade-mark and the patent application. I don't think anybody could put proportions on that. It is like a three-legged stool.

Q. If I understand correctly then, on the strength of your attorney's opinion, that he thought that he could get a patent even though the examiner and the Board of Appeals had denied his application, that you valued that as the principal asset towards the \$720,000 that you paid to the Addison-Leslie Company?

A. I would say one of the principal assets.

Q. Well, what were the others?

A. The other principal asset would have been the trade-mark.

Q. And what was the other one? Were there any more?

A. Well, there would be the mere asset, the physical asset.

I was not present at the trial that took place in the Supreme Court of the District of Columbia.

[170]

RAY B. MILLER

called on behalf of plaintiff testified as follows:

Direct Examination

By Mr. Dike:

I am 44 years old. I am a salesman, Northwest representative of The A. S. Boyle Company. I reside in Seattle. I have been connected with The A. S. Boyle Company since 1922, selling The A. S. Boyle Company products in Oregon, Washington, and British Columbia. In that connection I have had occasion to become familiar with the general trade in such materials.

I find that Cooperage companies use Plastic Wood more or less in the filling of knot holes and blemishes in the placques and barrels that come through that otherwise would be rejected. Two other companies here who make placques and barrels and such as that use Plastic Wood to fill in the knots and blemishes in the wood. It enables them to put the particular placque or the the particular plank through as a first class piece rather than being rejected otherwise it would be thrown out. That is, it would be rejected.

I have here one of the placques or planks which have been mended. This spot here has been mended with Plastic Wood. I did not see it filled. I have seen many of them filled though. This stave is representative of what I have seen manufactured. Posey Manufacturing Company at Aberdeen made that placque. They are purchasers of Plastic Wood.

(Testimony of Ray B. Miller—direct.)

I have seen it used at their factory for repairing plaques. We have had difficulty in getting the exact shade which they wanted to work on with this type of plaque and we have made a special colored wood for them. The Plastic Wood which we furnished was the exact appearance of that when the plaque was completed after being filled with Plastic Wood.

[171]

I first began working that territory for The A. S. Boyle Company in 1926. Before that I had been in the hardware business since 1922. The first time I contacted anything in the form of Plastic Wood was when the Addison-Leslie Company were manufacturing Plastic Wood. Prior to that I did not see anything in my territory which could be used for the same purpose for which Plastic Wood can now be used.

Cross Examination

I never saw anybody around a cabinet factory or wood working shop take some glue and wood sawdust and mix them up and make a putty of it. I never saw that done anywhere at any time. I never saw anybody make up a putty with wood sandings and glue to putty up anything.

My experience around cabinet making shops has been that they used Plastic Wood. I never went into a cabinet making shop prior to 1920. I don't know what was done then. This is the first artificial wood I know of. Cooperage companies have been using Plastic Wood for the last four or five years that

(Testimony of Ray B. Miller—cross.)

I know of. I introduced Plastic Wood to these cooerage companies to some degree. I worked with them on it. I did not teach them how to use it entirely. They had been using it to some degree previous to my working with them on it. Prior to the time that I taught them how to use Plastic Wood they had been using a substitute wood or wood that amounted to the same as Plastic Wood or similar to Plastic Wood but it did not work satisfactorily. I don't recall exactly what that material was. It was in bulk in a can. I don't know what the brand was at all. The first I saw that was about four years ago. I can't remember the brand name. I don't know what these cooerage companies were using in 1922. I hadn't contacted them previous to 1930. It was about four years [172] ago that I contacted the cooerage companies endeavoring to get them to use Plastic Wood, showing them the advantages of Plastic Wood where the placques came through with holes and knots in them and some of them otherwise would be rejected. [173]

DEFENDANT'S EVIDENCE

The defendant offered in evidence the following interrogatories:

Interrogatory 25: "Did Manfred Ethelwold Griffiths or his associates or representatives institute an action under the provisions of Section 4915, Re-

vised Statutes of the United States, in the Supreme Court of the District of Columbia, entitled 'Manfred E. Griffiths, et al., vs. Thomas E. Robinson, Commissioner of Patents, No. 50185,' in order to secure the granting of United States letters patent No. 1,838,618?"

A. "Yes."

Interrogatory 26: "If the answer to the preceding interrogatory is 'Yes,' were any other references introduced in evidence in the trial of that action for consideration by the Court besides the following:

United States patent Hyatt & Blake, 89582,

May 1, 1869;

Reagles, 311,203, January 27, 1885;

Merrick, 1,203,229, October 31, 1916;

Black, 1,294,355, February 11, 1919;

Hinze, 1,594,421, August 3, 1926;

Grawl, 1,652,353, December 13, 1927;

Ellis, 999,490, August 1, 1911;

British Patents

Bulling & Reese, 169,177, December 18, 1822;

Mennens, 2,775, November 13, 1860."

A. "No."

Interrogatory 28: "If the answer to interrogatory 25 is in the affirmative, was a sample of the composition disclosed in the Merrick patent, No. 1,203,229, placed in evidence or disclosed to the Court during the trial of this action?" [174]

A. "Yes."

(The defendant then offered in evidence an uncertified copy of the file wrapper and contents of the Griffiths application for which a certified copy was substituted after the trial was completed. This certified copy was substituted for the uncertified copy which was tentatively received in evidence as defendant's Exhibit A-5. This is forwarded as a physical exhibit.)

(It is stipulated subject to correction by reference to the original exhibit that the references made of record by the Patent Office in the Griffiths application were as follows:

1. In the Office Letter of July 11, 1924,
paper #2

Eckstein	458,157	Oct. 25, 1891
Dietz et al	133,969	Dec. 17, 1872
Jarvis	329,313	Oct. 27, 1885

2. In the Office Letter of Feb. 14, 1925,
paper #4

Reagles	311,203	Jan. 27, 1885
Wills et al	1,187,890	June 20, 1916

3. In the Office Letter of Sept. 8, 1926,
paper #8

Mennens (Br.)	2,775	Nov. 13, 1860
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4. In the Office Letter of Oct. 31, 1927, paper #13

Ellis	999,490	Aug. 1, 1911
Balke et al	1,468,222	Sept. 8, 1923
Lindsay	1,493,207	May 6, 1924
Ritschke	1,497,028	June 10, 1924

5. In the Office Letter of May 24, 1928, paper #16

Hyatt	89,582	May 4, 1869
Merrick	1,203,229	Oct. 31, 1916
Black	1,294,355	Feb. 11, 1919
Hinge	1,594,521	Aug. 3, 1926
Graul	1,652,353	Dec. 13, 1927
Bulling (Br.)	169,177	Dec. 18, 1922

[175]

(The defendant offered in evidence a copy of the decision of the Board of Appeals which was admitted as defendant's Exhibit A-6. This is reproduced in the Bk. of Exhibits. The copies of the following patents and publications were offered in evidence and received and marked as indicated. They are reproduced in the Bk. of Exhibits.

United States Patent to Pierson No. 65,267, May 28, 1867—Defendant's Exhibit A-7.

United States Patent to Merrick No. 1,203,229, October 31, 1916—Defendant's Exhibit A-8.

Copy of page 785 of "Engineering" dated Dec. 9, 1921, Defendant's Exhibit A-9.

British Patent to Oblasser dated Oct. 25, 1892 No. 19,242—Defendant's Exhibit A-10.

British Patent to Thompson No. 27,534, Nov. 23, 1897—Defendant's Exhibit A-11.

United States Patent to Black No. 1,294,355, Feb. 11, 1919—Defendant's Exhibit A-12.

United States Patent to Eckstein, No. 458,157, August 25, 1891—Defendant's Exhibit A-13.

United States Patent to Dietz et al., No. 133,969, December 17, 1872—Defendant's Exhibit A-14.

United States Patent to Ellis, No. 999,490, August 1, 1911—Defendant's Exhibit A-15. [176]

United States Patent to Graul No. 1,652,353, Dec. 13, 1927—Defendant's Exhibit A-16.

British patent to Mennens No. 2,775, dated 1860 Defendant's Exhibit A-17.

United States Patent to Arnold No. 1,195,431, August 22, 1916—Defendant's Exhibit A-18.

United States Patent to Lindsay No. 1,493,207, May 6, 1924—Defendant's Exhibit A-19.

United States Patent to Hyatt and Blake No. 89,582, May 4, 1869—Defendant's Exhibit A-20.

United States Patent to Balke No. 1,468,222, Sept. 18, 1923—Defendant's Exhibit A-21.

United States Patent to Reagles No. 173,865, Feb. 22, 1876—Defendant's Exhibit A-22.

United States Patent to Jarvis, No. 329,313, Oct. 27, 1865—Defendant's Exhibit A-23.

United States Patent to Dunwoody and Wills, No. 1,187,890, June 20, 1916—Defendant's Exhibit A-24.

United States Patent to Ritschke No. 1,497,028, June 10, 1924—Defendant's Exhibit A-25.

British Patent to Bulling and Reese No. 169,177, dated Dec. 18, 1922—Defendant's Exhibit A-26.

United States Patent to Kritchovsky No. 1,759,907, May 27, 1930—Defendant's Exhibit A-27.

Mr. Miller: I might explain that this patent (the Kritchovsky patent) is not offered as prior art, but to explain, and very briefly to the Court the nature of the patent that Griffiths endeavored to get into interference with while his application was pending, and it has a bearing on the interpretation of the claims that he now has.

Two British Patents to Parks No. 2,675, Oct. 28, 1864, and No. 1,614, May 16, 1868. The latter patents were introduced as illustrative of the state of the art and were marked Defendant's Exhibit A-28.) [177]

HENRY C. ROLLER,

a witness called on behalf of the Defendant, testified as follows:

Direct Examination

By Mr. Miller:

Q. What is your full name?

A. Henry C. Roller.

Q. Your age?

A. Fifty-eight.

Q. Where do you live?

A. In Glendale, California.

(Testimony of Henry C. Roller—direct.)

Q. What is your present occupation?

A. I am carrying on some development work in connection with some special applications of ship's bottom protection.

Q. State what your qualifications and experience has been in connection with nitro-cellulose compositions.

A. Well, approximately in 1896 I first became interested in cellulose through connections with the original American Viscose Company process, which was brought over from England by Cross & Bevan and put in the hands of Arthur D. Little of Boston, Mass. as their advising chemist.

About the same time I began receiving my education as an industrial chemist at Columbia University. From that I became associated with the Celluloid Company in Newark, New Jersey, who are manufacturers of celluloid, as one of their superintendents, and for a few years I held that position until another position in the same company, as development engineer in charge of their development department, was added to what I was already doing. The first department was purely manufacturing. That position necessitated intimate knowledge of all the processes of manufacturing celluloid, its application, what other people were doing, both in this country and abroad, to see [178] whether we could exchange ideas or possibly better themselves.

In other words, familiarizing myself with the industry from both the manufacturing point of view

(Testimony of Henry C. Roller—direct.)

and from the point of view of improvements as they were bound to come along. That position I held for thirteen or fourteen years, possibly.

I was called away from the Celluloid Company to use what knowledge I might have for war work, as to the protection of balloon fabrics, which were giving the government a great deal of trouble on account of the excessive loss of gas. And with that I lost connection with the Celluloid Manufacturing Company, but, as a celluloid man, I have kept in touch with it, not from the celluloid point of view but from the lacquer point of view, which is an entirely separate and distinct branch of the nitrate business.

Q. Over what period of time were you employed by the Celluloid Company?

A. From about 1904 or 1905 to 1917—somewhere along in there—1917.

Q. Did you have occasion while employed by that concern to visit European manufacturers of nitro-cellulose products and celluloid products?

A. Yes.

Q. And what did your work with the Celluloid Company during that period of time generally consist of?

A. Well, from the manufacturing end. The one department, I might explain, was that in the production of their camphor, and that became so easy that they wished on me this other position or job, to carry on their development department, and that

(Testimony of Henry C. Roller—direct.)

meant, of course, that I had to do and to know everything concerning the manufacturing details, from their acid mixtures through their washing operations down to the bleaching process, coloring, [179] moulding, finishing. In other words, all the things for which celluloid was used.

Q. Have you ever testified in a patent infringement suit before, as an expert witness?

A. No.

Q. Do you recall any books that you have read pertaining to nitro-cellulose and nitro-cellulose compounds?

A. Oh, yes. There have been many of them. The usual custom is to confer with the standard, a book by Worden which came out around about 1911, to which you can refer pretty nearly any problem that you may have in this one line. And then there are publications constantly coming out, German publications, the Society of Chemical Industry publishes a periodical, in which a separate section is devoted to that sort of thing; various German books, various translations of French and German.

Q. Will you speak briefly how nitro-cellulose is prepared?

A. Broadly, the operation consists of submerging a pure form of cellulose, such as cotton, as has been testified before, in a definite mixture of sulphuric and nitric acids. In detail, the thing is quite involved, because, depending upon the use that you want to put your finished product to, your propor-

(Testimony of Henry C. Roller—direct.)

tion of acid, your time and your temperature are variable so that the thing is rather complicated; and to give the whole thing in a nutshell, is just impossible.

Q. About how many nitro-celluloses are there?

A. Well, figuring back as to that time, there was the gun-cotton which both the Army and the Navy kept within very strict nitrogen limitation; the old collodion cotton, which continued a long while after its photographic use for collodion; then coming down to our own industry, what we call the film and varnish pyroxylin. Then there is what we call [180] roll material, from which plastic things are made, where the material is formed in blocks and shaved off.

And, again, that is subject to modifications depending on whether you want to use the thing for imitation ivory or for clear sheets or for special things; and in those days they used a great deal of it for the coating of ladies' dress stays, which had to be a particular form of nitration.

Q. Prior to 1916 what were the generally recognized solvents of nitro-cellulose?

A. Oh, that depends, again upon what you want to use it for,—wood alcohol, ether, grain alcohol, acetone, amyl-acetate and *alym*-alcohol.

Q. Have you read and become familiar with the Griffiths patent, that is the patent in suit here?

A. Yes.

(Testimony of Henry C. Roller—direct.)

Q. In a composition of that character is there any advantage in using as a solvent for the nitro-cellulose acetone in place of alcohol and the ether?

A. Yes. Where they specify "celluloid scraps" it is a better solvent and a quicker solvent than the ether-alcohol mixture would be.

Q. After the composition is prepared and is ready to apply to filling a depression in wood, does it make any difference whether you use acetone or alcohol and ether for a solvent for the nitro-cellulose?

A. Not a bit, because it all evaporates.

Q. Have you read the Pierson patent, No. 65267?

A. Yes.

Q. What sort of a binder does Pierson describe near the bottom of the first column of page 1 of his patent? What kind of material is that described?

A. At the bottom of page 1? [181]

Q. Bottom of column 1, page 1?

A. Well, he speaks here of "The pyroxyline is fully soluble in ether and alcohol, etc., while for my plastic agent the first of the above-named processes was quite unfitted for my purposes, explosiveness being very undesirable for the plastic manufacturers, and so, also, the variety of pyroxyline or gun-cotton used in the photographic art", the colloidion to which I referred a moment ago. Any one of these would form a gelatinous, sticky binder which would flow together with any filler which might be added to it.

(Testimony of Henry C. Roller—direct.)

Q. He mentions collodion?

A. Yes.

Q. Is that a nitro-cellulose?

A. Yes.

Q. Is that a nitro-cellulose of such a nitration as is suitable for a plastic wood?

A. Yes, it could be used for that.

Q. How about this pyroxyline that he mentions? Is that a nitro-cellulose?

A. It is.

Q. Is that of a character that can be used as a binder for Plastic Wood?

A. Yes.

Q. I notice he mentions xyrodine. What is that material?

A. That is the British name for celluloid.

Q. Is there a disclosure that you have noticed in that patent in making up a plastic composition similar to Plastic Wood?

A. Well, there is. Here he speaks on page 3, the first column of page 3, of taking a plastic, alcohol, ether, charcoal powder, and in place of the carbons, he indicates lamp black. "Lamp black or plumbago may be substituted for the [182] charcoal, sawdust, straw or any vegetable powder or fibre may also be substituted for the charcoal——"

Mr. Dike: Will you designate the place? I am not sure. Can you give us the paragraph?

A. It is the second full paragraph on the third page, not considering the first partial paragraph.

(Testimony of Henry C. Roller—direct.)

Mr. Miller: Q. What do you understand Pierson refers to by his "plastic" as used in that paragraph?

A. Why, the natural assumption would be that of having taken pyroxyline in some form, either as collodion cotton or pyroxyline and adding enough solvent to gelatinize it.

Q. I notice here on page 1, column 1, a second paragraph here states how he procures this material that he designates "plastic" by taking cotton, hemp, flax, grass, wood, starch or other equivalent vegetable matter, by acids * * * to soften, modify and render soluble" these materials; and then, in a corresponding paragraph directly opposite in column 2 he describes taking the cotton fibre and immersing it in nitric acid or a mixture of nitric and sulphuric acids to obtain a plastic. What sort of materials do you judge from that is plastic to be, mineral? Or is that nitro-cellulose?

A. A nitro-cellulose, of course.

Q. Is there any disclosure in the Pierson patent that the nitro-cellulose that he uses is the nitro-cellulose having a higher nitration than that of gun-cotton?

A. Only that he warns you that the higher nitration, that is to say the one which is in the explosive or gun-cotton class, is not desirable on account of its solubility and on account of its danger.

Q. Now on page 2, column 1, near the top of that column, in fact the first paragraph, beginning in

(Testimony of Henry C. Roller—direct.)

this column, Mr. Pierson states that "In practice, I propose to produce the [183] fabrics above named by mixing the plastic and solvents with mineral and vegetable powders, as sand, powdered stone, glass, brick earthenware, etc., carbonates of lime, sawdust, charcoal, and other carbonaceous substances." What composition, in simple language, do you understand he aims to make in that paragraph?

A. A plastic.

Q. Containing what?

A. Containing pyroxylines which have been reduced to a gelatinous form, and enough of these additive products, powdered stone, glass, brick, earthenware, carbonates of lime, sawdust, charcoal, to make the kind of a paste that he wants.

Q. What is this plastic composition that he describes in the middle paragraph of column 1, page 3? Is that a thin liquid, do you understand, from the proportions given?

A. That depends upon the proportions of solvent that he uses with relation to the degree of nitration or the pyroxyline he uses. If he uses a pyroxyline which is moderately soluble in the mixture of alcohol 4, ether 4, why he will have a limpid solution. If it is difficultly soluble it will merely be more solid.

And may I make a side remark here in that respect? In dissolving the nitro-cellulose it is possible to make a very, very thin solution and recover the cellulose in the form in which it was first put in

(Testimony of Henry C. Roller—direct.)

the solvent. In other words, the fibres will come back as fibres and one can quite often identify the source of material used in making the pyroxyline by throwing it out of solution that way and washing and recovering the cellulose.

Q. Then you understand from that particular paragraph, do you, that the composition that he proposes to make that [184] is useful for statuary and mouldings is one of the nitro-celluloses lower than: gun-cotton, 1 part, alcohol 4, ether 4, and a filler which may be charcoal, sawdust, straw, or vegetable cotton? Is that correct?

A. It is.

Q. Now, I notice in this formula that Mr. Pierson gives he states that charcoal powder or its equivalent, sawdust or vegetable powder is to be used 1 to 16 parts. Suppose that we have one of these filling ingredients Pierson in that formula has only one part—that is we have only one part of sawdust in that formula, what percentage by weight would the sawdust have in that composition?

A. Well, if you are measuring that all out by volume to begin with, obviously your relation of your product to your other ingredients would depend on the specific gravity of the material you use. As he speaks of "parts" as identical, we presume he is taking them all by weight. Then, under those conditions, he is giving you a total of ten parts and one part of sawdust, so he has got one part of sawdust in ten.

(Testimony of Henry C. Roller—direct.)

Q. Or 10%?

A. Yes.

Q. Supposing that he had two parts sawdust you would have eleven total parts, of which two parts would be sawdust?

A. Exactly.

Q. And that would compute out about 18% or thereabouts?

A. Whatever it is. I have not calculated it.

Q. I notice that Pierson suggests that oil may be used to advantage in that composition. What would be the effect of adding oil to a composition of nitro-cellulose 1 part, alcohol 4, ether 4, and sawdust, say 4 parts?

A. Well, after the solvents had been driven off your resulting mass would be more plastic by reason of the [185] softening action of the oils in there, assuming that you use any of the ordinary oils that are used, i.e., castor oil, linseed oil, rapeseed.

Q. Does the presence of the oil in compositions of that character have anything to do with the brittleness of the ultimate composition?

A. Yes.

Q. What effect does it have on that?

A. It reduces the brittleness.

Q. Do you know whether or not it was well-known, say prior to 1915 that in nitro-cellulose compositions castor oil could be used as a material for reducing the brittleness of nitro-cellulose compositions?

(Testimony of Henry C. Roller—direct.)

A. It was the accepted material to use in celluloid.

Q. Now, referring to claim 5 of the Griffiths patent, do you have in the Pierson patent a description in that lower paragraph of column 1, page 3, "A doughy, putty-like plastic composition comprising nitro-cellulose in solution, containing a volatile liquid and a finely-divided cellulose filler?"

A. Yes, you do if you used your sawdust or straw or vegetable powder which Pierson specifies.

Q. Now, is that composition of such proportions that it will harden upon mere exposure to air to substantially the rigidity and solidity of wood?

A. Yes.

Q. What will be the appearance of that composition as compared with the plastic wood, when the charcoal is used?

A. If charcoal were used, your finished mass will be black. In other words, each one of these fillers which I specified will give you the general appearance and character of the filler you use. If you use sand, you will get a hard, gritty substance; if you use light, soft filler you will get a [186] light-colored material, because the binder itself is almost colorless.

Q. When you refer to "binder" what do you mean?

A. I mean the nitro-cellulose which has been plasticised or dissolved by the solvent.

Q. Referring to Claim 6 of the Griffiths patent, do you have in the Pierson disclosure as made in

(Testimony of Henry C. Roller—direct.)

this same paragraph a doughy, putty-like plastic composition comprising nitro-cellulose in a solution containing a volatile liquid and a finely-divided cellulose filler?

A. Yes, you do except for the proportions that we just spoke of a minute ago here where you have—only 18%. You would have the same conditions with 18% cellulose filler.

Q. You see no distinction between the composition as defined by claim 6 of Griffiths and what is described here in the middle of the first column of page 3 of Pierson?

A. They are substantially the same.

Q. Wherever Pierson has more than two parts of his sixteen filler present, why, he will then have in excess of fifteen parts by weight of the whole composition. Is that true?

A. Yes.

Q. Referring to claim 8 of the Griffiths patent, does the composition as defined by this clause differ from what is disclosed in the Pierson patent at these paragraphs we are referring to?

A. Pierson merely mentions an oil whereas Griffiths mentions a “non-drying oil”, an oil that would not dry by exposure to air, like linseed oil as against castor oil or olive oil.

Q. What is the distinction between a drying oil and a non-drying oil?

A. Drying oils are those which will oxidize and dry [187] if exposed to the weather whereas non-

(Testimony of Henry C. Roller—direct.)

drying oils which undergo the same treatment will not oxidize, but will remain fluid. Castor oil is a type of non-drying oil and linseed oil is a type of the drying oils.

Q. Do you know of any reference books or patents wherein castor oil has been suggested as a means for ameliorating the brittleness of the nitro-cellulose composition?

A. Well, that book you mentioned this morning, Bockman, spoke of it.

Q. I hand you a copy of Bockmann and ask you to designate where he suggests using castor oil.

A. On page 1 of his introduction—this book was published in 1907—at the top of the page he says: “To ameliorate the hardness and brittleness which unfits it for certain uses, the product is kneaded with castor oil, cottonseed oil or other fatty oils.” And he refers back to Parkesine method.

Mr. Dike: Q. What page is that on?

A. That is the first page of the introduction in Bockmann.

Mr. Miller: Q. Is there a disclosure on that page incorporating that castor oil and nitro-cellulose?

A. Yes, because he says: “Parkesine is interesting as the forerunner of celluloid, and its preparation and application must therefore be dealt with. The inventor prepared it by mixing anhydrous wood naphtha with gun-cotton, and thus obtained a solution suitable, according to its consistency, for purposes ranging from waterproofing clothing to the

(Testimony of Henry C. Roller—direct.)

insulation of telegraphic wires, manufacturing of tubes, etc.”

And then he goes on to state about amelioration of hardness and brittleness and he adds some of these uses. He speaks of Parkesine as being the more adaptable to celluloid. [188]

Q. Can you refer to any statement that makes use of nitro-cellulose composition in which castor oil is used for that purpose?

A. Well, Pierson mentions it, for one. In fact pretty near all of them do because it is such a common thing. It is like putting——

Q. Referring to the Parkesine patent—or the Parks patent.

A. Parks is again one of the earlier ones.

Q. Do you find any disclosure in any of them advocating the use of castor oil in a nitro-cellulose composition to reduce the brittleness?

A. Well, in the Parks.

A. Just a second. I have a photostatic copy here. This is the one, 1864, and the number is 2675, and on line 35 of page 3 he says: “The gun-cotton compound I have used alone. It, however, became too hard and brittle to be uniformly employed for certain purposes. To avoid this I kneaded with it in a mixing machine castor oil or many other similar oils.”

Q. Could there be any other purpose for adding oils to the composition that you described, other than to reduce the brittleness of the nitro-cellulose?

(Testimony of Henry C. Roller—direct.)

A. Not of an oil of that nature and I do not know of any—there are certain blended oils which added to the pyroxyline solution contribute a little bit of toughness.

Q. That would be the sole purpose of adding oil to that composition he describes?

A. Yes.

Q. Now referring to claim 11.

The Court: The witness seems to make some distinction between “toughness” and “brittleness.”

A. May I say this: Brittleness is friability, where [189] a thing will snap off. Toughness might be something where an article will stand repeated flexing without breaking.

The Court: That is brittleness raised to the Nth degree?

A. It is more than that. You have noticed possibly, where you want to break a piece of metal and haven't anything to cut it with, and some pieces you have to bend back and forth before they break. The longer it takes before they break off, the tougher they are. It is probably more a matter of degree.

Q. Mr. Roller, I wish you would explain to the Court how your experience in connection with the celluloid industry has any bearing or relationship to plastic compositions, such as are disclosed in the Griffiths patent?

A. Celluloid and plastics such as you have asked about are so closely connected that one automatically leads to the other. For example, plastic materials

(Testimony of Henry C. Roller—direct.)

such as these are nothing more than nitro-cellulose with a larger amount of solvent for making moulds and things of that sort as against practically the same sort of compositions with less solvent so that they may be put through the process of manufacturing celluloid with the minimum loss of solvent.

Q. And how is most commercial celluloid made?

A. You are speaking of celluloid?

Q. Yes. How was it made while you were working with the Celluloid Company?

A. By taking nitro-cellulose which has been nitrated to that degree of nitration which has been found by experience to be the best suited for a specific objective. Let's cite an example, Ivory: That is nitrated so that one will get a specific degree of nitration, which was at that time called solubility. It was then after it had dried, mixed with camphor which sometimes [190] runs from as much as 30 or 40% of the original weight of the cellulose. These two are mixed together mechanically, dried and put into containers and the desired amount of solvent, which might be alcohol or a mixture of alcohols, and allowed to soak. That is to say, because the amount of solvent was so relatively small, the penetrating time is longer. After the soaking period, which is a matter of a day or two, this very tough but still gummy material was cut up in the right sized batches, or weights for batches, and put on hot rolls and manipulated so that the mass was made homogeneous. At the same time the solvent was driven off.

(Testimony of Henry C. Roller—direct.)

The reason for the heated rolls was that heat, plus the camphor, plus the solvent, hastens the formation of a uniform material which can be taken and piled up into what are known as chases or forms, (mere iron boxes) to the depth of about 6 inches. This is then put under hydraulic pressure, heat again applied, so as to make the mass one entire solid body; and, depending upon whether you wanted sheets of a given thickness, the solvent remaining was allowed for subsequent operations.

The block was run through a machine, a planer with a large knife, and sheets shaved off and hung up. This means that when all the solvent has been driven off, they are returned to the further process or operation, where they are polished or cut or moulded for whatever purpose they want them for.

Q. In both the manufacture of celluloid and the manufacture of a plastic composition, such as disclosed in the Griffiths patent, we are dealing with a substance that has nitro-cellulose as a base or binder for a starting point? Is that correct?

A. That is correct.

Q. And in both of them we are adding solvents and fillers of various kinds? [191]

A. Exactly.

Q. Now, referring to claim 11 of the Griffiths patent, do you have a copy of that patent?

A. I have it right here.

Q. How does the composition as defined by that claim differ from the disclosure that is made in the Pierson patent?

(Testimony of Henry C. Roller—direct.)

A. They are substantially the same.

Q. And it differs in what, if any, respect?

A. Well, merely in the fact that they use a slightly different solvent which will bring about the same result, as they will go off just the same, and the oils which he mentions, says, "A non-drying oil."

Q. In the Pierson patent you do have nitro-cellulose in a solution that is volatile in part, at least, do you not?

A. Yes.

Q. And although this clause specifies a ketonic liquor, what difference does that make in the composition of Pierson?

A. It makes no difference. It is a substitution of one solvent for another.

Q. Say in 1915, was acetone, which is a ketonic liquor, a well-recognized chemical equivalent of ether and alcohol, insofar as its ability to dissolve nitro-cellulose was concerned?

A. Yes, very well known.

Q. In this Pierson patent where he uses the sawdust or vegetable powder do we have a finely-divided cellulose filler as called for by claim 11?

A. If he uses sawdust he would have a finely-divided cellulose, yes.

Q. And suppose he uses vegetable powder?

A. He would still have it. [192]

Q. In the Pierson composition, is that of such a character that it will—

(Testimony of Henry C. Roller—direct.)

The Court: Let me ask—"vegetable powder", just what does that mean?

A. A vegetable powder, I would take from the description here, is nothing more than almost any form of cellulose which has been ground and cut or in some method reduced to a form much finer than it is in its natural state. For example, the cotton fibre might normally be, let us say, one-half inch long. By proper cutting, that is converted into what is known as cotton flocks, where the fibre is reduced to one-half or one-quarter of a millimeter, which of course makes a powder out of it.

The Court: And "vegetable powder" is such a powder as has some different meaning than that given it by a layman, where all parts of the vegetable—

A. (Interrupting) In other words, the pulp or juicy materials of the vegetable have been driven out by drying or some other means, possibly by extraction, if it is water, until you eventually have nothing but a fibre; and this is, more than likely, a technically improper statement. In other words, to use it for chemical reaction would require more than purification, as for example in the case of linters, which is used for explosive purposes, they are put through a rather long process to make them pure and ready for further operation.

Mr. Miller: Q. What is cellulose?

A. Cellulose is the generally-accepted term for that part of the plant structure which forms what

(Testimony of Henry C. Roller—direct.)

you might call the equivalent of nature's building material for the construction of the plant, to make the ultimate stems stronger or supple or stiff, or whatever nature might have intended for them. In other words, it is the material which forms the greater part of nature's building material in plant life. [193]

Q. Would you say that practically all vegetation contains cellulose?

A. I believe it is correct to say that all vegetation contains it to some greater or less degree.

Q. When you speak of vegetation do you include trees, so that wood is largely cellulose?

A. Yes.

Q. This vegetable powder that Pierson refers to would necessarily be largely cellulose, would it?

A. Yes, I take it that.

Q. Now, when Pierson makes up this composition of plastic, or nitro-cellulose, 1 part; alcohol 4; ether 4; and sawdust or vegetable powder, 1 to 16, does he have a composition there of such proportions as will harden upon mere exposure to air to substantially the rigidity and solidity of wood, as called for by claim 11 of the Griffiths patent?

A. Yes, he would have.

Q. And can you tell what proportions he would have to have of his sawdust or vegetable powder so that the filler would be present in not less than fifteen parts by weight, as called for by Claim 11 of the Griffiths patent?

(Testimony of Henry C. Roller—direct.)

A. Well, he would obviously have to take something on which his solvent would react,—say take one part of nitro-cellulose, four of solvent, and say two-thirds parts of his filler.

Q. If he makes up a plastic with one part plastic or nitro-cellulose, alcohol four, ether four, and saw-dust two parts, or filler—

A. (Interrupting) Let me see. That would figure up to 1, 4, 4 and 2?

Q. Yes.

A. Well, that would be about twenty some odd percent, [194] wouldn't it?

Q. I haven't figured it out.

A. I haven't figured it out, either.

Q. But it would be in excess of fifteen parts?

A. Yes, it would.

Q. Referring to claim 15 of the Griffiths patent, how does that claim differ from the disclosure made in Pierson?

A. Well, he comes out and says specifically that he wants to add to that castor oil and a resinous body.

Q. What sort of a solvent does Pierson use as compared with the solvent Griffiths calls for in his claim?

A. Pierson uses, preferably, his mixture of ether and alcohol as against Griffiths' solvent of wood alcohol or methyl-acetone or some of the solvents which came into use after the time of Pierson.

(Testimony of Henry C. Roller—direct.)

Q. Pierson in this claim 13 refers to acetone, doesn't he?

A. Pierson in claim 13?

Q. I mean Griffiths.

A. Yes.

Q. And that is the chemical equivalent of Pierson's solvent, alcohol and ether?

A. Yes. In other words, it is a solvent which probably—I am not sure of this at all, but I presume that acetone was found to be a better solvent after Pierson's time.

Q. Now, what was the effect of the castor oil and the "resinous body" that is specified in Griffiths' claim 13?

A. Castor oil has always been used in the celluloid business to add to such compositions where more than the normal amount of flexibility is wanted. The resins are similarly used where something more than the natural—if you can call it [195] that—the natural tackiness of the celluloid composition is wanted.

Q. What do you mean by "tackiness?"

A. Tackiness is the adhesiveness or the ability to adhere to something besides itself.

Q. Would you say that in 1915 anybody familiar with the composition as disclosed in Pierson, if he wanted to increase the stickiness of his composition, that it would naturally occur to him to introduce a small amount of resin for that purpose?

A. Yes, I think it would.

(Testimony of Henry C. Roller—direct.)

Q. Suppose that he wanted to reduce the brittleness, make the composition a little tougher, what would he introduce for that purpose?

A. If he were looking for cost, he would use castor oil, or if he didn't care so much about cost he might increase his camphor content.

Q. Referring to claim 15 of the Griffiths patent, how does the composition as defined in his claim differ from what is disclosed in Pierson?

A. Well, nothing more than he gives proportions there, while Pierson does not state.

Q. What proportions do you have reference to?

A. He speaks here of limiting the amount of wood filler to be used at "Not less than fifteen parts by weight."

Q. Pierson, when he uses in excess of two parts sawdust, does he have his wood filler more than fifteen parts by weight?

A. When used in excess?

Q. Yes.

A. Yes, he would have.

Q. I notice in claim 15 that he specifies "A non-drying oil." Is there any disclosure of that in Pierson?

A. Pierson merely mentions an oil, in his second full [196] paragraph on page 3 and in the first paragraph of the second column on page 2 he again mentions oil. Pierson says further down linseed oil or turpentine may be used. Now, linseed oil and cottonseed oils and castor oils were all known at that time

(Testimony of Henry C. Roller—direct.)

and could easily be used as a means of softening that.

Q. Is there any particular advantage in using a non-drying oil in a composition of this character, over a drying oil?

A. Personally, for some applications, I do not see that there is because while it is true that castor oil is quite soluble in the solvent used for nitro-cellulose for the celluloid business, at the same time any oil which we mix in to make a pliable mixture of any kind would be likely to impart its flexibility to whatever it went into.

Castor oil has a decided objection, that you cannot add more than a certain amount because if you do it oozes out and your product becomes smelly or rancid or greasy. As an illustration, in the case of the manufacture of old celluloid collars and celluloid cuffs and shirts, anything over 7% would make itself evident, and therefore 7% was never exceeded. The usual percentage was around 4.

Q. How about the use of a mineral oil, such as the ordinary lubricating oil? Would that be suitable?

A. There, the difficulty of getting it mixed into a batch I imagine would be so great it would be automatically abandoned.

Q. And with respect to Claim 15 of the Griffiths patent you have disclosed the same thing in the Pierson patent, with the single exception that Pierson does not distinctly specify a non-drying oil and

(Testimony of Henry C. Roller—direct.)

Pierson does not include in this composition the resinous body? Is that correct?

A. That is correct. [197]

Q. Referring to claim 16 of the Griffiths patent, do you also find the same construction or the same composition in the Pierson patent with the single exception that Pierson does not include a resinous body and does not distinctly state that his oil is a non-drying oil?

A. That is correct, also.

Q. Do you find any distinction at all between the composition as defined in claim 17 of the Griffiths patent and the composition described in the Pierson patent?

A. No, because they both specify a dough-like—a composition for hole filling and filleting which before exposure to the air is dough-like and putty-like and contains finely-divided wood, nitro-cellulose, a common volatile liquid, and after exposure to the air has a wood-like rigidity and solidity.

Q. This is true of Pierson, the patent you have there?

A. Both the same.

Q. With regard to claim 18 of the Griffiths patent, how does that compare? How does the composition in that claim compare with what is described in Pierson?

A. Substantially the same.

Q. The limitations as to the wood filler, that the wood filler shall be present between fifteen and 30

(Testimony of Henry C. Roller—direct.)

percent by weight, is that within the limits defined by Pierson of 1 to 16 parts of sawdust?

A. Yes.

Q. Now I notice that the Pierson patent makes some other disclosures about using some other fillers. Up here near the top of column 1, page 3, he says that he proposes to make a composition of "plastic, 1 part; alcohol, 4; ether, 2; sand, 5". [198] Do you know what kind of a composition that would make?

A. Well, it would probably make a very hard, gritty composition as against a soft, smooth composition if wood flour were used. More broadly speaking, I should say that the character of the filler that you used would be imparted to your composition. If you used black, gas black or charcoal, you get a black stuff. If you used cork, you would get a material which had some of the characteristics of cork, both in color and in feel; and so on, in using iron filings or anything else that one might be foolish enough to want to put in.

Q. Suppose that you used pine flour, very fine pine sawdust, what would the composition be like in that case?

A. Probably very similar to that where you used the sawdust from any wood which is more or less similar. Take, for example, spruce or poplar. The amount of natural resins in fine sawdust of that kind I hardly think would be sufficient to impart their resinous qualities to the product that you would

(Testimony of Henry C. Roller—direct.)
make because these things there are present not in an extractable form.

Q. Extract them from the solvent?

A. You could do it, yes.

Q. Supposing you included—instead of using pine flour, suppose you took ebony.

A. Ebony is a great deal denser.

Q. How would your product be, then?

A. Your product, in the same proportions, would probably be a bit harder than that made from the use of pine.

Q. That would be the color of ebony?

A. Yes.

Q. Suppose you used vegetable ivory?

A. That also would be tough, and hard, because vegetable ivory is the material they used to speak of—I have [199] forgotten. I am speaking about 1936 against something far back. That is the material they used for making buttons. Consequently your material would have to be of the hardness of buttons.

Q. What is vegetable ivory?

A. Vegetable ivory is a gum—more a sort of a nut. The thing looks very much like an avacado seed and is allowed to dry until it becomes just as hard as animal ivory, and that is used as a means of making buttons—or used to be. I don't know whether it is now or not.

Q. I notice near the bottom of that same column Pierson proposes to make another composition by

(Testimony of Henry C. Roller—direct.)

taking plastic, 1 part; alcohol, 4; ether, 2; and chalk, 1 to 4. What kind of a composition would that make?

Mr. Dike: Where is that?

Mr. Miller: Column 1, page 3, near the bottom.

A. Well, that would make a white composition, chalk being white; and if you added too much of the chalk it would be bound to make a mark because the binder would not be there in sufficient quantities to hold all of the filler.

Q. Would you say that practically any finely-divided filler could be used in a composition of nitro-cellulose or plastic and a mixture of alcohol and ether and produce a composition that would have the characteristics of the filler, when it was completed?

A. Provided only one thing, that the filler that you used was not soluble in the paste which you make up using nitro-cellulose and the volatile solvent for the nitro-cellulose.

Q. In the Griffiths composition does a chemical reaction take place between the finely-divided wood and the nitro-cellulose or the acetone or the benzol or the toluol?

A. None that I can imagine. [200]

Q. The wood remains in there as wood particles after the composition hardens?

A. Yes.

Q. And the same would be true if you use a

(Testimony of Henry C. Roller—direct.)

sand filler, that the sand would remain there as sand particles?

A. Yes.

Q. And the same would be true of chalk or any other filler?

A. Anything in which the filler is not soluble in these solvents with nitro-cellulose.

Q. Now I direct your attention to page 75 of "Engineering." Do you have a copy of that before you?

A. Yes.

Q. Directing your attention to the article entitled "Plastic Wood," have you read that article?

A. I have.

Q. In that article he states that the Plastic Wood is a collodion preparation. What do you understand is collodion?

A. Well, as I said yesterday, I think I would understand collodion, as of that date, to be the degree of nitration of cotton which is used either for medicinal purposes or surgical purposes, similar to "new skin". Then for the old photographic purposes where they used it in place of what was later substituted in the form of a gelatin solution.

Q. Is it some form of nitro-cellulose?

A. It is a nitro-cellulose.

Q. Do they usually have a solvent when they speak of it as collodion?

A. Collodion itself is generally accepted, I think, as a solution. But collodion wool is the nitrated

(Testimony of Henry C. Roller—direct.)

cotton from which collodion is made up. Collodion is an ether-alcohol mixture. [201]

Q. Then what would be understood in the nature of this composition described in this publication when he states that the plastic would be “A collodion preparation made with very fine wood meal?”

A. The inference would be that he had simply taken nitro-cellulose and made a plastic or putty out of it and filled it up with wood flour or wood fibre, or wood meal, they call it, which I presume is about the same as wood flour, possibly a little bit coarser material than wood flour might be.

Q. Are the solvents generally used in making collodion volatile?

A. Yes.

Q. What sort of a solvent do they use?

A. Ether and alcohol had been the accepted solvent generally up to that time. I don't know what they use now, if they use it.

Q. So that in this article you have a disclosure of a plastic wood that is made from nitro-cellulose and some kind of a volatile solvent and a finely-divided cellulose filler?

A. Yes.

Q. I will ask you to refer to the Thompson patent and explain to the Court what is disclosed in that patent that has a bearing on the Griffiths composition.

A. Well, Mr. Thompson says that he uses “Dissolved or softened celluloid, which is a plastic ma-

(Testimony of Henry C. Roller—direct.)

terial obtained by means of gun-cotton and camphor, whatever may be its name, its preparation, its mode of fabrication, its condition, or its composition, forms the basis and constitutes the integral and essential elements. It is previously dissolved or sufficiently softened as hereinbefore stated in order that one or more of the substances hereinbefore mentioned may be added.”

And then he says the “Mixture is usually made whilst [202] cold by simple agitation.

“This improved paste-gum or coating to which the inventors have given the name of ‘Calfatine’ is usually of a brown color, but it may be made white or of other suitable colors as desired,——”

Mr. Dike: What part of the patent are you reading from?

A. I am reading from line 30 and downward.

“It is usually of a brown color, but it may be made white or other suitable colors as desired, such as blonde or wood-color, etc.”

He details in his solvent where he uses acetic acid, acetone, alcohol and essential oils for the liquid portion of that mixture. His nitro-cellulose is celluloid.

Q. He has his nitro-cellulose in the celluloid?

A. Yes.

Q. That is where he gets it?

A. Yes. Incidentally, in all celluloid there is, as I believe I said, a considerable portion of camphor, which contributes largely to any solution process.

Q. And he uses as a solvent for his celluloid,—does he use acetone?

(Testimony of Henry C. Roller—direct.)

A. I will have to take the time to look and see.

Q. I direct your attention to line 20, I think it is, of the complete specifications.

A. Yes, in line 18 it says: "This invention has for its object the manufacture of a water-resisting and impermeable paste-gum or coating which is obtained by means of celluloid dissolved or simply softened by one or more suitable solvents such as acetone, acetic acid, ether, alcohol, or the like, pure or mixed."

Q. Now, what sort of fillers does Thompson contemplate using in his solution of celluloid dissolved or softened by [203] acetone, acetic acid, ether, alcohol, or other solvent?

A. "Resins, oils, gums, waxes or the like, vegetable refuse or even tale, chloride of magnesium, mineral or organic salt, vegetable, mineral or animal powders."

Q. Now the vegetable powder that he uses would be largely cellulose, would it?

A. Yes.

Q. When he makes up his composition does he have a composition in the form of the paste containing nitro-cellulose in a volatile solvent and a finely-divided cellulose filler which will harden on mere exposure to air to substantially the solidity and rigidity of wood?

A. Yes, he would.

Q. And suppose he uses this other filler tale, chloride of magnesium or mineral or organic salts. How would that composition appear?

(Testimony of Henry C. Roller—direct.)

A. Those compositions would take on the character of whatever filler he used.

Q. What is the consistency of the composition which Mr. Thompson proposes to make? Does he give you any indication as to that?

A. Well, with the celluloid I would say that he would have something that was fairly stiff; in other words, a paste rather than a fluid.

Q. And does he give you any instructions as to what he is going to use this composition for?

A. He speaks of it as a coating.

Q. I direct your attention to line 25.

A. "This paste is intended either for sticking articles together, such as wood, cardboard, cord, fabrics, cork, leather or the like, or for covering them over the whole or part of their surface with an impermeable layer which protects them entirely from [204] contact with and from the action of water, whether fresh water, salt water, household water, or the like."

Q. I notice down here in line 44 he also mentions this material can be used "for repairing articles that are broken, or deteriorated by water, such as old furniture, vehicles, wagon covers and the like." How would this material be used in repairing old furniture?

A. Well, I should take it from the description that he uses it more as a cement than as a filler. He does not say here that this material fills, but here is the one to which he has added some filler.

(Testimony of Henry C. Roller—direct.)

Q. I direct your attention to the Oblasser patent. Have you read that patent?

A. Yes.

Q. What kind of a composition does Oblasser propose to make?

A. Well, he wants to make a nitro-cellulose mixture with a suitable solid material, again using sawdust or cork as a filler.

Q. I notice that he describes taking cellulose and treating it with nitric or sulphuric acid. Would a treatment of cellulose with nitric acid produce a cellulose?

A. I believe that is a misprint, because sulphuric acid if used alone instead of a mixed acid is not practical. If you use either one of the two acids by themselves you get an entirely different and unsuitable product which you cannot use for any commercial purpose.

Q. That is this should read "nitric and sulphuric" instead of "nitric or sulphuric?"

A. I should say so, yes.

Q. How do you deduce that?

A. Only experience tells you that if you attempt to put some cotton into straight sulphuric acid, unless you work [205] under most careful laboratory conditions, why, you are not going to get anything which has any use.

Q. Suppose you take pure cellulose and place it in pure nitric acid, concentrated nitric acid, would you get a nitrate at all?

(Testimony of Henry C. Roller—direct.)

A. You would get a nitrate, but it has no commercial use that I know of.

Q. I notice from Oblasser that he is proposing to add some camphor to his cellulose after it has been treated by the acid. What would that produce?

A. That would produce celluloid.

Q. If you treat a cellulose with just pure sulphuric acid and then add camphor, would you ever get a celluloid?

A. No, you would not.

Q. Now, after having made this composition of cellulose, attacked by acid, or converted by acid, and adding the camphor, what did Mr. Oblasser then do with this material? Did he dissolve it in anything?

A. He speaks of dissolving it in ether or by acetic or pyroligenous acid or by acetone or by any other suitable solvent.

Q. And when that is dissolved how does that compare with Griffiths celluloid scrap dissolved in industrial spirits, benzol or acetone?

A. Well, if you used enough camphor it would be the same thing—substantially the same thing.

Q. After he has made up his solution, does Mr. Oblasser use any filter?

A. Yes, he does. He speaks again of using what all the rest of them speak of, glass or sand or sawdust or cork, etc. He has one that some of them do not, and that is starch. Any one of those things you

(Testimony of Henry C. Roller—direct.)

asked for for could be used for a filler, if it did not dissolve in the compound. [206].

Q. If you used cork waste or sawdust?

A. That would be a cellulose filler according to the Oblasser claim.

Q. Do you find any suggestion in the Oblasser patent of using any gums?

A. I don't see any.

Q. How about this resin that he mentions here in the bottom line on page 2, is that a gum?

A. Yes, it mentions resins. I missed it.

Q. What would be the effect of a resin in his composition?

A. Why, depending upon the percentage that he used, the character of the resins he used.

Q. Wood imparted to the rest of his composition, would that make the composition adhesive?

A. Depends upon what resin he used.

Q. Suppose it was ordinary resin?

A. Probably make it tackier, yes.

Q. I will ask you to refer to the Black patent. State how this composition is made up.

A. Well, Black again says: "A suitable nitro-cellulose, such as celluloid or its equivalent, a solvent such as acetone, a suitable hard gum such as gum amber or its equivalent, and a hard, non-absorbent, insoluble and powdered substance such as silica." But he is after something different and does not want the softer wood flour or cork as a filler, and

(Testimony of Henry C. Roller—direct.)

he uses a hard powdered glass or silica for his filler.

Incidentally, this particular man wanted to use this for a dental filling, where anything of a woody nature would not be of service.

The Court: Is there very little cellulose in cork?

A. I really do not know what the percentage is, but from [207] its nature I would say that the percentage is high. I wouldn't say whether it was 50 or 60 percent or higher than that, 80 percent.

Mr. Miller: Q. How would the cellulose percentage in cork compare with the percentage in wood, ordinary wood like pine?

A. I would imagine that there is more cellulose in pine than there is in cork because cork is of a gummier nature. It is a pure guess, without looking it up. The percentage of gums in cork is higher than it is in pine.

Q. Would there be very much difference in the two?

A. I really do not know, but I should not think—there might be as much as five or ten percent, yes.

Q. But, roughly, about the same, within five or ten percent?

A. Well, if you want—I should not like to make a positive statement because as a matter of fact I do not know.

Q. Coming back to this Black patent, what was the purpose of adding his gum amber in his composition of nitro-cellulose, solvent and filler?

(Testimony of Henry C. Roller—direct.)

A. I assumed there that he wants that again for a toughener for his pyroxyline paste, something which would stay in, if he added camphor, the camphor would probably not stay in if used for a tooth filling.

Q. What does he mean over here in lines 107 to 110 that "Gum amber serves the purpose of a binder to hold the particles of the mass together and also gives the mass the quality of adhesiveness, causing it to adhere to the walls of the cavity?"

A. Well, I don't believe that I know just how gum amber would help, when it comes to sticking to a surface like the wall of a tooth.

Q. Would it have any effect in increasing the adhesiveness at all? [208]

A. It might easily enough, but I do not know.

Q. Then, as a binder, what do you understand by that? What is the function of a binder?

A. I would take it in this instance the binder is the nitro-cellulose plastic which forms the binder for the particles of silica.

Q. Now, referring to the Eckstein patent, how does that composition compare with what is disclosed in Griffiths?

A. That again is substantially the same.

Q. What difference is there between Griffiths and Eckstein?

A. They are substantially the same. He speaks of gun-cotton instead of celluloid scrap, as one difference, but he uses oil, castor oil, resin, gum and

(Testimony of Henry C. Roller—direct.)

pigment, and he also adds another item which may or may not be—it would not have any effect on a plastic compound, by the way—magnesium chloride, which again is a mineral filler.

Q. He makes up a composition here, collodion wool, which is nitro-cellulose?

A. That is nitro-cellulose, they are all nitro-cellulose.

Q. And alcohol or acetic ether, which serves what purpose?

A. As a solvent.

Q. And also castor oil serves what purpose?

A. A softening agent, again.

Q. The same as in Griffiths?

A. Exactly.

Q. And also a small percentage of resin or Canada balsam, what is the purpose of that?

A. The same purpose that Griffiths would use it for.

Q. Does that perform the same functions as Griffiths' ester gum? [209]

A. Yes, the ester gums were not getting known until much later than—oh, 1914 or 1915.

Q. Now, Eckstein does not propose to use a wood filler, does he, or cellulose filler?

A. Well, because he wants a material as a substitute for glass.

Q. I notice here at the top of the second column on page 2 that he suggests the use of zinc white or heavy spar. What would the introduction of these

(Testimony of Henry C. Roller—direct.)

materials into his composition of collodion wool solvent, castor oil and resin do?

A. Well, that would make them into a white material which he could use for such purposes as he gives, for making collars and cuffs or shirts of white material.

Q. Now, this zinc white and the heavy spar, would they be regarded as fillers in that connection?

A. Yes, undoubtedly.

Q. I ask you to refer to the Merrick patent. What kind of a composition does Merrick propose to make up?

A. Merrick again has—in using nitro-cellulose and divided wood, leather, paper pulp, for filler, he is ringing the changes on the filler and still maintaining the plastic with plastic pyroxylines.

Q. Does he have any nitro-cellulose present?

A. Yes.

Q. Does he have a solvent present?

A. Yes, he has a solvent and in that solvent he supplies—got to have a solvent or it won't work.

Q. Does he have a filler?

A. Yes, he has a filler. He has a divided wood or ground-up leather or paper pulp.

Q. Is there a mention of a mineral filler there?

A. Yes, he speaks of asbestos, if I remember, or other [210] fibrous material, and asbestos, of course, is a mineral.

Q. That would not be a cellulose filler?

A. No.

(Testimony of Henry C. Roller—direct.)

Q. How about powdered cork?

A. That is, again, a cellulose filler.

Q. Referring to the advertising matter that is in circulation by the plaintiff here where they state that the wood base putty containing nitro-cellulose, solvent and wood flour or their equivalents is an infringement of the Griffiths patent, do you find in the prior art, the prior arts that you have discussed, nitro-cellulose, solvent and wood flour or their equivalents in combination, together?

A. Yes.

Q. In all of them?

A. Substantially all of these patents which you have mentioned.

Q. That is true of Pierson's moulding composition?

A. Yes, that is true of Pierson's moulding composition; and it is true of Oblasser and it is true of Eckstein's and it is true, as I say, of all these others that you have mentioned.

Q. Eckstein does not have a wood flour, does he?

A. No, but he has a filler.

Q. Pierson and Merrick—Pierson, Merrick, and I think—how about the Parks patent?

A. I want to make sure that Parks is one of those. Parks does, Oblasser does.

Q. Do you know whether Griffith was the first to make up an artificial or a synthetic wood from wood powder or sawdust and a suitable binder?

(Testimony of Henry C. Roller—direct.)

A. Why, I should say no, from the date of his patent as given here. [211]

Q. He applied for his patent in 1923?

A. Prior to 1923, back in 1904, 1905, and 1906, why, we knew of these mixtures around the shop and then, more than that, the evidence of these other patents, which are dated back in 1867, are substantially the same thing.

Q. Do you know of any book that refers to the making up of artificial or synthetic wood compounds of sawdust and a binder, that was published prior to 1923?

A. Yes, there is a book by Hubbard published in 1920 in which he mentions the use, on page 8, in which he mentions the use of sawdust in combination with a binding and cementing material, such as glue, albumen, etc., and then on page 178 he says more specifically, "In the manufacture of a plastic composition" which can be made employing "sawdust or shavings mixed with a solution of nitro-cellulose."

(The plaintiff offered in evidence pages 8, 10, and 178 of Hubbard's "Utilization of Wood Waste" which were received as defendant's Exhibit A-30. These are reproduced in the Bk. of Exhibits.)

Q. Would you say that the Griffiths patent differs from these prior artificial or synthetic woods described in Hubbard might be because of the fact that he uses a different form of binder for wood powder or sawdust?

A. No, I would not.

(Testimony of Henry C. Roller—direct.)

Q. In what other respect does the Griffiths patent differ from these prior artificial woods?

A. In the main, it does not differ at all; the same thing. He uses scrap celluloid or pyroxyline; he uses a more convenient form of nitro-cellulose than these earlier people did who did not have the benefit of celluloid because it was not made then.

Q. And you would say that the difference between [212] Griffiths and these prior synthetic woods described in Hubbard resides in the binder?

A. If by "the binder" you are meaning the nitro-cellulose, yes.

Q. And these prior synthetic woods used what other binder?

A. They used about the same thing. Merely celluloid is a more convenient and probably a cheaper source of supply.

The Court: Is that because it has been put through the process once?

A. That helps a great deal, to be particular, perhaps; but in 1867 and the early days, for example, celluloid was not made commercially and consequently there wasn't enough cheap scrap as a source of supply. It happens to be true that by reworking the stuff you get a materially stronger composition, and old stuff is always used if it is possible. The repeated *repeated* reworkings seem to help the reaction or the combination or whatever they may be.

Mr. Miller: Q. Is starch or flour a possible filler to use in place of wood flour in the Griffiths composition?

(Testimony of Henry C. Roller—direct.)

A. It is a possible filler.

Q. Is starch soluble in water?

A. Not unless you boil it, as far as I know.

Q. Is it soluble in cold water?

A. In cold water, no.

Q. And so with the fact—suppose you had a composition made up after Griffiths, but instead of using wood flour you used ordinary starch or wheat flour, if that composition was hardened and subjected to water would the starch be dissolved out of that?

A. I don't believe that it would.

Q. And why not? [213]

A. Because in mixing your soluble cellulose you have covered each one of these particles with a microscopic film of nitro-cellulose. You have each particle of the material protected with a layer of water-proof material.

Q. Referring to this English patent, Parks, No. 1614, are these fillers that he proposes to use in his mixture of nitro-cellulose and solvent, namely starch, arrowroot,—are the fillers he proposes to use, namely starch, arrowroot and ground-up bleached cotton fibre,—are those cellulose fillers?

A. Ground-up cotton fibre is, but starch is not.

Q. How about the arrowroot?

A. Neither is arrowroot.

Q. Have you personally, prior to 1917, when you left the Celluloid Company, had occasion to make up any compositions of nitro-cellulose, solvent, and a finely-divided cellulose filler?

(Testimony of Henry C. Roller—direct.)

A. Yes, many times.

Q. I wish you would explain to the Court in detail how you made those up?

A. Well, if you make a mistake, in doing some carpenter work, say, quite frequently instead of using wood, use our celluloid to make up or form an article, if one made a "bull" through clumsiness and left a gap, in the wood-working vernacular, the carpenter will take his sawdust and his glue, or anything that comes handy, and fill up that so-called "Dutchman." But in the Celluloid factory it was quite common in the carpenter shop to take some of the old celluloid "dope" and use that as a binder and put sawdust in it and patch up a gap. And I have seen it happen in our pattern-making shop where a casting pattern would be defective through a nick, they would run across to the film department, get some of the film "dope" and sawdust, and build up their own patterns with it [214] to save time in making an entirely new pattern.

In other words, it is the workman's means of correcting some error or some carelessness.

Q. What do these compositions that were made up contain, as compared with this Griffiths patent?

A. They contain nitro-cellulose in solution, a volatile solvent and a filler. The filler could be a cellulose or wood, sawdust, filler or it might have the celluloid itself, which is a filler you could class, I suppose, either as inert or if you left it in long enough it would combine with the dope to soften,

(Testimony of Henry C. Roller—direct.)

but it is never left long enough for that.

Q. What is the consistency of the composition that was made up?

A. It is usually made as stiff or putty-like as possible because the more putty-like and stiff it is the more solids you would have and the less solvent you would have to drive off by evaporation. Consequently, there would be less tendency to have shrinkage.

Q. And when the composition was dried, how was that done? Was that done by the application of heat?

A. No, just let it stand in the air.

The Court: You stated in explanation of how it prevented shrinkage. Just give that.

A. Where you take—the more insoluble materials there were in the composition, the less would be the shrinkage. Consequently you would mix up your dough-like material with the minimum amount of solvent in, and if there is only a little bit of solvent to drive off your residual mass must be greater in quantity and consequently there will be less shrinkage for the ultimate result. Does that answer your question, sir?

The Court: Yes. [215]

Mr. Miller: Q. When the composition dries, what is celluloid, that material that you have described here as having been made by the Celluloid Company?

(Testimony of Henry C. Roller—direct.)

A. If you add wood sawdust filler the thing is hard and tough as wood; but if you add the celluloid scrap as a filler it takes about all the characteristics of the celluloid itself.

Q. Do you know the nature of cellulose plane wing dope that was manufactured and used in this country during the World War?

A. Yes.

Q. What kind of material did they use in that?

A. These were nitro-celluloses dissolved in suitable solvents, with suitable softening agents or what was used in the later day term plasticizers, a toughening agent to stand the vibration, and they were reduced to the consistency where they could be applied with a brush, painted on the cloth.

Q. Were the solvents volatile?

A. Yes, they were all volatile because they had to be air dried.

Q. Now, in the file history of the Griffiths patent at the bottom of page 10 it is stated that, "Cellulose acetate is normally regarded as the chemical equivalent of nitro-cellulose where the explosive or inflammable properties are lighter or not involved," is that true?

A. I should say it was, yes.

Q. Suppose that we had in the Griffiths composition, instead of nitro-cellulose, cellulose acetate, would that composition work about the same way?

A. I am not familiar enough with the cellulose acetates as they have been developed in later years.

(Testimony of Henry C. Roller—direct.)

In the earlier days at the time that I had knowledge of them they were not only [216] expensive, but they were unreliable and they were not considered a satisfactory substitute for nitro-cellulose. And in connection with my impression there that they are unsatisfactory, such a large concern as the Eastman Kodak Company does not altogether approve of substituting the acetates for the nitrates in the manufacture of their film base.

I believe that is so. Whether it is an accurate statement or not I am not prepared to say; but up to 1914, 1915, and 1916, why, the acetate was not a desirable form. It could be used, yes.

Q. On page 28 of the file history in Mr. Griffiths' affidavit, he makes a statement: "But cellulose acetate can be used for making plastic wood very similar to that produced by cellulose nitrate."

Do you agree to that statement?

A. I think it would be possible, but whether it would be commercial, would be something I do not know.

Q. On page 29 of the same file history Mr. Griffiths in his affidavit states: "In reading a printed specification or other technical paper where reference is made to nitro-cellulose in circumstances in which inflammability or explosiveness are not involved in the results desired, a person skilled in the art, in my opinion, would automatically consider that other cellulose products could be employed in

(Testimony of Henry C. Roller—direct.)

place of the nitro-cellulose, for instance cellulose acetate.”

Do you agree with that statement?

A. Not altogether, but because as I said a moment or two ago, if, in the time that I have also mentioned, one would hesitate a long while toward using the acetate, although they might like to on account of its non-inflammable nature. But the difficulty in handling it was such at those times that it was not a very desirable thing unless you were driven to it. [217]

Q. In the Griffiths composition where he includes castor oil and the gum, do the addition of these ingredients used in his compound of nitrate solvent and wood flour merely bring about the expected and normal functions?

A. Why, surely.

Cross Examination

By Mr. Dike:

Q. You said that certain of the patents, as I understood you, describe substantially the same thing as is shown and described and claimed in the Griffiths patent? That is correct, isn't it?

A. I believe so.

Q. Which of these patents? Will you just give me the list again of the patent which you say are substantially the same as Griffiths'?

A. Well, we will take, for instance, one, the Pierson patent, in which he made——

(Testimony of Henry C. Roller—cross.)

Q. (Interrupting) Just give me the list now; it will save time if you will.

A. I haven't segregated those, Mr. Dike.

Q. I will ask you to just read through them and give me that list.

A. Well, we can take these. Start back with Mr. Parks.

Q. Which one is this?

A. I think I will withdraw the Parks reference because that one does not speak very fully but Mr. Pierson, for example, Merrick, for another, Black, for another,—although he doesn't mention the wood. He mentions the filling material. Oblasser, for another. Those could be extended by a longer list.

Q. I want the entire list, Mr. Roller.

A. Well, here is one by Dietz and Wayne. I am not [218] permitted to ask whether this "being substantially" must include the wood filler, Mr. Dike? Or is it permissible?

Q. I asked you whether they describe substantially the same thing as Griffiths? That is what you stated?

A. Yes.

Q. Now, I want you to state which of these patents you say describes substantially the same thing as Griffiths.

A. I see. In my belief the substitution of an inert, of the order of sand, to take the place of wood flour, is pertinent as being substantially the same because any one working with things of that sort,

(Testimony of Henry C. Roller—cross.)

wanting a specific result, would naturally incline to putting into the material something similar. To that extent, I would say they are substantially the same, in which case they would include Black, Bussy, Hermit, Merrick, Pierson, who has already been mentioned.

Q. Confine yourself to the one you have testified about, if you please.

Mr. Miller: We might explain, at the very head of this statement there is a mention of a patent from abroad by the name of Bussy?

A. Bussy is one.

Mr. Dike: Q. In that case you have, Bussy is one, Black, Merrick—

A. I think that covers them, out of the eleven.

Q. That completes the list?

A. Yes, it does.

Q. Now did I understand you to say or do you think that an ordinary mechanic skilled in this art in 1923 when this application was filed, the Griffiths application was filed, would have been taught by anyone of these patents, standing alone, how to make the composition which we have referred to conveniently in this case as Plastic Wood, which is a compound [219] described by Griffiths?

A. Yes, most decidedly.

Q. If you had been a mechanic at that time, an ordinary mechanic at that time you would have been able to make up some Griffiths' plastic composition from any of these patents?

(Testimony of Henry C. Roller—cross.)

A. Moreover, I have actually made it. Now, in the case of a carpenter, who might be termed as a mechanic, I presume—

Q. (Interrupting) No, I am asking you whether he would have known how to do it if there had been put in his hand at that time any one of these patents?

A. I believe he would have, yes, a man of normal intelligence.

Q. And he would have required no other information except such as he would have in his ordinary skill in his trade?

A. I don't believe he would require any additional information, no sir.

Q. Now, what one of these patents do you say is the best description of the Griffiths composition, of Plastic Wood?

A. I think the Pierson patent is the best one.

Q. You think the Pierson patent is the best?

A. Yes.

Mr. Dike: Q. Have you ever made up any of the formulae of the Pierson patent and mixtures?

A. I will qualify that to this extent: Yes, I have weighed out the ingredients and another party did the actual mixing of them.

Q. You have seen it done, then?

A. Yes.

Q. What formula did you make up? [220]

A. That was one of them calling for your plastic, in part.

(Testimony of Henry C. Roller—cross.)

Q. Well, refer to the page and column.

A. On page—the second full paragraph in the first column of page 3 where he asks for—

Q. (Interrupting) Beginning “In carbons?”

A. “In carbons,” yes.

Q. You made up that formula?

A. I made up that formula using the charcoal.

Q. Did you make up any other formula?

A. Yes.

Q. Which one did you make up?

A. Also using a formula for sawdust.

Q. Did you make up any other?

A. I believe that there were sets of three, yes.

Q. What was the third one?

A. Using a different proportion of the filling material but not of the solvent or the pyroxyline.

Q. Were all three made up at the same time?

A. Yes.

Q. Why did you use different proportions of filling material?

A. Simply to show the difference in effect of the various relations between the filler and the mineral and the solvents, and the fluidity of this particular nitro-cellulose that was being used.

Q. Now will you point out exactly what line, and referring to page and lines, or pages and paragraphs of the Pierson patent, contain the description which you say in 1867 would have taught you how to make the mixture of the Griffiths patent in suit?

A. Well, in the first place, assuming that I knew [221] what Plastic Wood is, which is a nitrated

(Testimony of Henry C. Roller—cross.)

cotton, knowing what both alcohol and ether are, I would proceed to make up my mixture as he directs in there: Wetting it with two parts of——

Q. (Interrupting) I don't think you quite understand the question, Mr. Roller. I asked you what particular lines or paragraphs in the Pierson patent would have taught you in 1967 to make the Griffiths composition.

A. Check. On page 1, column 2, starting with the last paragraph. On page 2——

Q. (Interrupting) And going how far? Let's be clear. Will you read the last question?

(Question read as follows: "I don't think you quite understand the question, Mr. Roller. I asked you what particular lines or paragraphs in the Pierson patent would have taught you in 1867 to make the Griffiths composition.")

A. Down to approximately the fifth or sixth line from the bottom of that page.

Q. On page 2?

A. On page 2, the second column—second paragraph, first column.

Q. I am mixed up, Mr. Roller.

The Court: The witness began his answer, evidently, to the preceding question of yours and not continuing in answer to your last question. If you will go back and read it. The inflection would indicate that.

The Court: "Going how far," I fear you didn't answer that.

(Testimony of Henry C. Roller—cross.)

Mr. Dike: I am still in doubt as to how far he went on page 1.

A. On page 1 up to the fourth or fifth line from the bottom of that second column, on page 1. And then skipping to [222] the——perhaps starting on page 2, first column, the first full paragraph.

Q. And going how far?

A. Going down to the second line from the bottom of that paragraph.

Q. The second line from the bottom of the second paragraph?

A. The second paragraph.

The Court: Paragraph or column?

A. Sir?

The Court: Paragraph or column?

A. The second line from the bottom of the first paragraph, and then on page 2, the second column and beginning with the third full paragraph.

Q. That is variety No. 3?

A. Variety No. 3.

Q. Yes, going how far?

A. Down to the point where it says, "Greater flexibility is required. Some drying oil may be added to the plastic mixture," and continuing on until it says, "The mixture to be applied to the cloth as above."

Q. Just a minute. Do you include—let me come around and mark your patent up. Then we will save time.

A. Just broadly speaking, where he merely says what he puts into the thing.

(Testimony of Henry C. Roller—cross.)

A. Broadly speaking, these paragraphs would be read and interpreted up to the point where they finish describing the purpose, and stopping where they indicate what the application of these particular mixtures might be.

Q. That is variety 3, you go down to the sentence beginning, "Another plan is to treat the cloth"—

A. Exactly. [223]

Q. And the next?

A. In variety 4, that entire paragraph. The next paragraph where he indicates the purpose and the different sorts of filling, in speaking of iron powder, steel filings, etc., continuing through that paragraph and up to here, which is the end of that paragraph.

Q. You mean to there?

A. No, beyond. He speaks of "oxide of lead," which could be used and says "Iron, stone, plaster, etc."

Q. To make clear, you include, then, the first paragraph, not a full paragraph, on page 1?

A. The balance of the paragraph.

Q. Yes, which is the balance of a paragraph beginning on page 2. That is right, isn't it?

A. Yes. Then the entire second paragraph.

Q. Which is the first full paragraph on page 3?

A. The second.

Q. The second full paragraph on page 3?

A. Yes.

Q. And that is all?

A. That should give everybody more than enough information to go ahead and make it.

(Testimony of Henry C. Roller—cross.)

Q. Now, referring to the second full paragraph on page 3, which I understand to be the basis of the three mixtures which you say you saw made, what are the low limits—

A. (Interrupting) That is the—

Q. Just a minute. What are the low limits of the amount of charcoal powder?

A. One part of charcoal.

Q. And the high limit?

A. Four.

Q. Four? [224]

A. I believe so. That is what we made up. I know that is what was made up.

Q. Read the third line.

A. Of the first paragraph?

Q. Second paragraph. Didn't you say that you made up—

A. (Interrupting) Lamp black,—“Charcoal,” in other words, “1 to 16.” Four was the limit which we made up.

Q. But sixteen was the high limit given?

A. Yes, is the limit mentioned there.

Q. In the first mixture you used one part of charcoal?

A. Yes.

Q. And in the second mixture you used two parts of charcoal?

A. Yes, in the second mixture I used two parts of charcoal.

Q. And in the third mixture you used four parts of charcoal?

(Testimony of Henry C. Roller—cross.)

A. Yes, the idea being there to get into the limits of not less than sixteen parts.

The Court: Not less?

A. Yes, one would have been less and two would have given us 18%, and the four would have given about 25%.

The Court: I don't understand that.

A. Well, sir, if you have a mixture of one of the solids, four of—one kind of liquid and four of another liquid and one of filler you have a total of ten. If one of these parts in that ten is that charcoal in question, you would of course have 10% charcoal in the mixture, would you not? If, however, you change that percentage of charcoal to two parts, viz., one to four, you have—let's see—eleven, which figures out closer to 18%. If you increase that charcoal to three parts you have 1, 4, 4 and 3, which makes you four parts in twelve or twenty-five percent. [225]

The Court: You said four in twelve?

A. Maybe it is my stupidity. It is one to thirteen.

Mr. Miller: Q. I think it will save time if you will give the exact proportions first of the first mixture you made up.

A. That was: one of nitro-cellulose; four of ether; four of alcohol; and one of charcoal.

Q. Now give the second one.

A. One of nitro-cellulose; 4 of alcohol; 4 of ether; 2 of charcoal. And the third, 1 of nitro-cellulose; 4 of ether; 4 of alcohol; and 4 of charcoal.

(Testimony of Henry C. Roller—cross.)

Q. And what was your first mixture like when you got it done?

A. I did not stay at the plant long enough to see what the mixture looked like when it had been allowed to set for a few hours. I did, however, see it as it was mixed up and it was quite fluid.

Q. About between a solid and a liquid?

A. Yes.

Q. What was the second one like?

A. Almost the same but a little bit thicker; and the fourth was correspondingly thicker.

Q. How thick was the third one? Was that—

A. I didn't see the material.

Q. Did you see it mixed?

A. I saw it mixed up in the mixture. It was thick, but this material readily—

Q. (Interrupting) How thick? Give some comparison.

A. Well, like very soggy gingerbread when you squeeze it very thin, and not much of it, about as near a comparison as I can think of,—when it was finished, I mean.

Q. What was the form of the charcoal which was used? [226]

A. It was pulverized charcoal, the mesh of which I do not know. I should judge it was the order of possibly one hundred or one hundred fifty mesh; that is the charcoal would have passed freely through a wire mesh, 150 to the inch.

Q. About like flour?

(Testimony of Henry C. Roller—cross.)

A. Coarser than flour a trifle. Are you speaking of wheat flour and not corn flour?

Q. Wheat flour.

A. Yes, it was coarse flour, probably coarser than corn flour.

Q. Why did you decide to put in, in the second mixture, two parts of charcoal?

A. The reason for that was in making up an entire schedule of a great number of materials, and in order to determine what they appeared like, it was saving time to get in between. In the instance that you mention, putting in sixteen parts of ground charcoal with four of ether and four of alcohol and one of nitro-cellulose, experience would dictate that that would be something which was not workable; and my desire was to keep within the limitations of the specifications and get enough of a range to show whether this thing in that particular form might have been of any use.

Q. Then you do not find anything in the patent which told you how many parts to use to get a particular result?

A. You can take anything which your presumed experience would dictate would give you a suitable result.

Q. Isn't it true before you began to make up these things you were thoroughly familiar with the Griffiths patent?

A. No, I was not familiar with the Griffiths patent.

(Testimony of Henry C. Roller—cross.)

Q. Had you read it?

A. Perfunctorily, yes.

Q. But you were familiar with Duratite Wood Dough, [227] were you not?

A. I was familiar with it only in having seen it, but knew nothing detailed of its components, and still know nothing of its manufacture,—nothing either of its composition or proportions.

Q. (Interrupting) And you were also familiar, were you not, with Plastic Wood?

A. You mean the Boyle product?

Q. Yes, sir.

A. No, sir; I have no familiarity with that.

Q. You haven't seen it?

A. Oh, I might have seen it, but not to recognize it as being such.

Q. You chose your amounts and proportions in making these mixtures, did you not, with the intention of getting something which would be a plastic material?

A. Yes. It formed one of a series of tests so that you could have a series of comparisons when they were finished, that you would have an entire picture of the subject of mixtures of a nitro-cellulose, volatile solvent and fillers.

Q. What was the character of the nitro-cellulose you used?

A. Used two kinds. We used both the nitro-cellulose which had been recovered from celluloid and the nitrated compound which is bought in the

(Testimony of Henry C. Roller—cross.)

market and known as a 15-20 second cotton, and marked as such on the container.

Q. In other words, the cotton used by the lacquer industry?

A. Yes, sir.

Q. In which experiment did you use the one that had been recovered from celluloid?

A. In both. They were checked expressly, the recovered [228] celluloid checking against the nitrated cotton.

Q. Then you made six mixtures instead of three?

A. Of this particular set of the Pierson, yes.

Q. Of that Pierson composition in the second paragraph of the first column of page 3?

A. Yes.

Q. If I understand correctly you say you made, in accordance with the second paragraph of the first column of page 3 of the Pierson patent, a mixture made with one part of charcoal, another made with two parts of charcoal and another made with four parts of charcoal, each of these being made in turn with nitro-cellulose and the celluloid scrap?

A. Correct.

Q. So that made six combinations?

A. Yes.

Q. Did you also use sawdust?

A. We did.

Q. Did you also use sawdust with nitro-cellulose and celluloid scrap?

A. Yes.

(Testimony of Henry C. Roller—cross.)

Q. So that with sawdust you made one combination with nitro-cellulose which had one part only, which had two parts of sawdust, and another which had four parts of sawdust?

A. Correct.

Q. And the same three mixtures were made with scrap celluloid?

A. Not with scrap celluloid, but with pyroxyline which had been recovered from celluloid.

Q. With that correction, my statement is correct, is it?

A. Exactly.

Q. Now, what other mixtures were made, or you had made [229] at the same time?

A. Mixtures which contained small percentages of rosin, small percent of rosin plus oil, small percentage of oil alone without the rosin.

Q. And were any of these made with nitro-cellulose and the other with pyroxyline recovered from celluloid scrap?

A. I am not clear on it, but I think that most of them were. There were only a few which were made with the pyroxyline recovered from the celluloid.

Q. And you also made some of them carbon and some with charcoal and some with sawdust?

A. Yes.

Q. Altogether about how many mixtures were made?

A. I suppose nineteen or twenty or more.

(Testimony of Henry C. Roller—cross.)

Q. You have given me twelve that were made with the nitro-cellulose and pyroxyline scrap. I should think it would run more than 19 or 20.

A. It possibly did because after I had left instructions were left with Mr. Webb to make up some with sand in, and there might have been some other things.

Q. So, altogether, there were quite a large number made?

A. There was what we hoped was a representative range to cover these specifications.

Q. Did you make experiments in connection with the mixtures described in the other patents besides the Pierson patent? Or did you see them made?

A. I believe not. I believe I had nothing to do with making up anything else, although others were made.

Q. Now, you used one part, two parts and four parts, respectively, of charcoal and of sawdust?

A. Yes.

Q. You also have used three parts, five parts, six parts, [230] and so on up to sixteen parts?

A. We could have.

Q. Why didn't you?

A. For the reason experience would have dictated, had you used, let's say sixteen parts of sawdust, you would have had such an unwieldy bulk and such a dry mass that the result would not have approached anything like a putty-like material.

(Testimony of Henry C. Roller—cross.)

Q. In other words, you were trying to produce a putty-like material?

A. Yes.

Q. Who else was present when these experiments were made?

A. Mr. Webb.

Q. Who decided what proportions were to be used?

A. The proportions were taken from Pierson's specification.

Q. But who dictated what proportions were to be taken from these specifications?

A. I don't remember that.

Q. Now, referring to Pierson's patent and to the last paragraph of Paragraph 1, which refers to what I will call variety No. 1 because that is what the patent calls it, and tell me what that mixture is described as having been made for.

A. He evidently uses that mixture to be applied as a paint or a darb to cotton batting.

Q. In other words, a coating for cloth?

A. Yes, some fabrics.

Q. And then from this cloth you understand that they made up various articles like statuary and architectural moulding and furniture and vessels and tubes? Is that correct?

A. Yes, as he describes it here.

Q. So the application as described there is simply a coating for cloth? [231]

A. As a coating or form of paste.

(Testimony of Henry C. Roller—cross.)

Q. And that does not describe any filler, does it, in that coating?

A. No.

Q. I notice that it says that the solvent will not completely dissolve the plastic. That is different, isn't it, from the Griffiths composition where the solvent does completely dissolve the nitro-cellulose?

A. It is a question of whether that solvent would or would not dissolve the plastic. You have got a pure plastic so you can spread it better.

Q. But the patent says it does not dissolve it completely, doesn't it, the Pierson patent? Look at the middle of that paragraph.

A. The words "Plastic" and "Cellulose" there, as they are used—

The Court: You don't want me to understand cellulose is a plastic? I don't so understand.

A. No, sir. Cellulose is an insoluble material which, after it has been treated with acids, becomes a material which becomes a plastic or soluble by the treatment with a solvent.

The Court: You go back and read what was said before the Court interrupted. Perhaps some explanation then would enlighten the Court.

(Question read as follows: "I notice that it says that the solvent will not completely dissolve the plastic. That is different, isn't it, from the Griffiths composition where the solvent does completely dissolve the nitro-cellulose?")

The Court: Is there any explanation to help the Court? It seems like plastic and nitro-cellulose were

(Testimony of Henry C. Roller—cross.)

being used as pretty nearly the same thing; it sounds like it.

Mr. Dike: I will ask the witness to explain where [232] Pierson uses the word "Plastic" in his patent, if there is a peculiar use of the word.

A. There may be in the first instance which you have just referred to. He speaks of it as a plastic cotton, and by wetting a plastic cotton or what might reasonably be assumed as a collodion cotton, as the material of those days—in other words, nitrated cotton which becomes soluble in a mixture of ether and alcohol. It is true that he says two parts of alcohol and two parts of ether to one part of his cotton and his wetting mixture or solvent, as against four parts of alcohol and four parts of ether later on.

Mr. Dike: Q. Isn't it true, Mr. Roller, that throughout this patent Pierson uses the word "plastic" where he refers to the plastic, for instance at the beginning of variety No. 3 and variety No. 4—I mean nitro-cellulose where—or his composition as nitrated cotton which has been wetted or mixed with a solvent. Isn't that what he refers to by plastic?

A. But presumably with enough solvent to make the thing fluid or plastic so that you can spread it.

Q. Isn't it also true that he further describes in his patent the manufacture of what he later on calls plastic and then gives a series of formulae for the use of this plastic?

(Testimony of Henry C. Roller—cross.)

A. It is true he changes the proportions of solvent he uses and thereby—

Q. (Interrupting) Can't you answer that question yes or no?

A. Yes. I guess the answer would be yes to that.

Q. I call your attention also to make sure, to the last line or line and a half of the second paragraph on page 1, which reads: "And vegetable matter so changed is what I denominate 'plastic'."

A. Yes, that is true. [233]

Q. Perhaps I was wrong in suggesting that it contained solvent. The definition given there does not contain solvent, does it, but simply refers to the nitrated cotton?

A. Yes. In other words, cotton made so it could be turned into a plastic by a solvent.

Q. Now, referring to variety No. 2 beginning on the second page, column 1, middle of the column. This also is intended as a covering for fabrics, is it not?

A. Apparently, yes, sir.

Q. And a fabric certainly has nothing to do with anything described in the Griffiths patent, does it?

A. No, that has nothing to do with fabrics.

Q. Now, variety No. 3, page 2, beginning the third paragraph in column 2, that also is a water-proofing material for fabrics?

A. Yes.

Q. Nothing else, is it?

A. That is what he says here.

Q. All right. Now I am going to ask you to refer to variety No. 4, and mark the paragraph that be-

(Testimony of Henry C. Roller—cross.)
gins: "In metals" (a); that is the bottom paragraph on page 2. The next paragraph which begins on page 3, beginning: "In silicious and agrillaceous compounds," mark that (b); and the one that begins, "In carbons, etc." mark that (c). Now I will refer to these three paragraphs as varieties 4a, 4b and 4c, and then we won't get mixed up as to what we are talking about. Now, take 4b, the variety 4b, that is a stony material, isn't it?

A. Yes, where he says, "Quartz or glass," it would be hard.

Q. And it also is useful as a paint or a coat for protecting roofing. That is true, isn't it?

A. I personally would not want to paint a roof with anything like that. [234]

Q. Now refer to 4c. That is the one that you say you saw the specimen made up of?

A. Yes.

Q. Is there any indication in that paragraph that the material is to be a doughy or putty-like composition?

A. Not as indicated by the paragraph, but anyone making up a mixture of that sort or having to do with things of that sort would realize it must be from the nature of the proportion of solvent and pyroxyline and filler.

Q. Are you sure you are right in that statement?

A. If you exceed the limit of fifteen or eighteen percent and if you use a sawdust, it is bound to be doughy.

Q. Well, suppose you take the formula given there with the low limit for the filler; that would be

(Testimony of Henry C. Roller—cross.)

one part plastic; alcohol 4; ether, 4; charcoal powder, 1 part, or sawdust powder one part. That would be a liquid, wouldn't it?

A. It would be a pretty heavy liquid.

Q. You said before, doctor, it would be a soupy liquid.

A. I don't think it would be as thin as soup. I think it would be near the order or honey.

Q. And if you took sixteen parts of filler, would the material stick together?

A. It might if you used considerable pressure.

Q. But not without pressure?

A. It would require pretty heavy pressure, I believe almost more than you could apply by squeezing it in your hands.

Q. That being the case, there isn't any instructions in this paragraph which suggest the use of a combination of proportions which would produce a putty-like material, is there?

A. He doesn't give you any proportions for getting a putty-like mass, no. [235]

Q. And you had to choose such proportions as would give you a putty-like material?

A. Why, surely, for a fairly—

Q. (Interrupting) That is sufficient. Where do you find anything in there that says the material will harden to a wood-like consistency, in that paragraph?

A. There is nothing in that paragraph to indicate that, other than common knowledge. That solvent—

(Testimony of Henry C. Roller—cross.)

Q. (Interrupting) No, I am asking you about the paragraph. I am not asking you to apply your knowledge at this time. There is nothing there, is there?

A. There is nothing given in that paragraph, no.

Q. Referring now to variety 4a, that was intended for paints or preservatives, coatings, wasn't it?

A. So he says, yes.

Q. Do you think it would make a good one?

A. I wouldn't care to use it.

Q. Now, referring to the engineering publication. Do you find any proportions for a mixture given in that?

A. Is it permissible to amplify my answer to that last question as to whether I would care to use it as a protective coating?

Q. Yes, go ahead.

A. Where he specifies for use either in—subject to the action of light, of course not. There might be instances where it would serve a purpose.

Q. All right, now refer to "Engineering."

A. I have it.

Q. Do you find any proportions for a mixer given there?

A. No.

Q. Now, referring to the Thompson or Bussy patent. This patent describes an adhesive, doesn't it? [236]

A. Paste, glue or coating, yes.

(Testimony of Henry C. Roller—cross.)

Q. That is, it is something to stick other things together with?

A. Well, you might be able to use it for that, yes.

Q. Isn't that what it was intended for? Read the second paragraph, beginning line 14. Wait a minute. Beginning line 25 of the complete specification.

A. "This paste is intended either for sticking articles together, such as wood, cardboard, cord, fabrics, cork, leather or the like, or for covering them over the whole or part of their surface with an impermeable layer which protects them entirely from contact with and from the action of water, whether fresh water, salt water, household water, or the like.

Q. It is either an adhesive like glue or the DuPont nitro-cellulose cement with which you are familiar, or a fabric coating?

A. Not necessarily. There are other adhesives which are considered plastic in themselves, under certain conditions.

Q. Look at the formula on page 3, which gives acetic acid one thousand parts, alcohol 400, essential oils 400, and celluloid 200 parts. Wouldn't that be a thin liquid?

A. I am not prepared to say. I haven't made up any of that.

Q. Haven't you had experience enough to know perfectly well that is a thin liquid?

A. I don't believe I have, no.

(Testimony of Henry C. Roller—cross.)

Q. I am very much surprised, Dr. Roller. I thought you have had a great deal of experience. Don't you think that with 800 parts of alcohol and essential oils and only 200 parts of celluloid it would be a thin liquid?

A. What kind of essential oils? What kind of celluloid?

Q. Then you do not find any description in the patent [237] which is sufficient to tell you what kind of essential oils and what kind of celluloid?

A. No, I do not.

Q. Will you now look at the Eckstein patent, 458,157. The material described in that patent is intended as a substitute for glass, isn't it?

A. So he states, yes.

Q. And also that it has the appearance of ivory and may be used for the making of collars, cuffs, shirt fronts and the like?

A. Yes.

Q. Look at the Merrick patent. Does that patent give any proportions for the mixture which it describes?

A. No proportions are given.

Q. What are the characteristics that are necessary for a shoe filler? Explain to the Court first, perhaps, what a shoe filler is, if you know.

A. I am not familiar enough with shoes, incidentally, to know what a shoe filler is.

Q. Now you have testified to having seen certain compositions made up while you were with the Celluloid Company. That was before 1917?

(Testimony of Henry C. Roller—cross.)

A. Yes.

Q. Did you keep any record of the proportions of the ingredients which were used?

A. No, I did not. That was information belonging to the company and consequently I had no right to keep any records.

Q. And you are speaking entirely from memory?

A. I am speaking entirely from memory. [238]

Redirect Examination

By Mr. Miller:

Q. Mr. Roller, I will ask you to refer back to this Pierson patent. Would you consider, from his description that he makes in the second paragraph, column 1, page 1, that he was using the word "plastic" there as synonymous with nitro-cellulose?

A. Yes, because he speaks at the beginning of that paragraph of having treated cotton, hemp, flax, etc., by acids, and therefore converting these celluloses into some form of a soluble cellulose.

Q. Referring to that paragraph on page 3 that has been designated by Mr. Dike as paragraph 4b, of what consistency do you understand that composition to be when it is to be used for making the "Excellent statuary and good stuccos," referred to in the last two lines of that paragraph?

A. In order to mould articles of that shape and form it must necessarily be in the form of some kind of a putty.

Q. Have you seen any suggestion in this paragraph of spreading this material on a fabric, or that

(Testimony of Henry C. Roller—redirect.)

this statuary or stucco is made out of a fabric, or a coating on it?

A. None whatsoever.

Q. Referring to the next paragraph which opposing counsel has designated as paragraph 4c, of what consistency is this composition to be when he is going to use it for making statuary and mouldings as stated in that paragraph in the last few lines?

A. Of the same consistency that he would have used the materials in the preceding paragraph; in other words, a paste.

Q. Would you say a putty?

A. I wouldn't say "paste." I think you have a putty or a moulding clay which is of the consistency of putty. [239]

Q. In this Griffiths patent, the patent in suit, he mentions here that his material is to be used for "filling, coating or moulding" in the first paragraph, lines 4 and 5. Is there anything in this Pierson patent, paragraph 4c, that indicates to you that the composition is to have the same consistency for moulding as the Griffiths composition when it is used for moulding?

A. No. They both speak of them for moulding; and moulding materials all have the same consistency before they can be used as such.

The Court: Just what do you understand by "moulding" there?

A. By "moulding" a material of the consistency which sculptors use to form their statuary, and such

(Testimony of Henry C. Roller—redirect.)

other forms of material they make, that is pliable under the fingers or some light tool instead of by pressure which might be applied by machinery.

Mr. Miller: Q. By a "moulding material" is usually meant one that can be manipulated by hand and take such form as one might wish to have.

The Court: I thought there was some uses to which it was intended to be applied.

A. Oh, these plastics can be used if they are of a moulding consistency, to form articles and toys out of, figures of animals, small pieces of statuary, either manipulating it by hand or moulding it into plaster Paris moulds which have been formed for that purpose, to make large quantities of the same thing,—toys.

Mr. Miller: Q. Do you know whether these compositions which are described in Pierson and Griffiths are suitable for making something to represent carved wood?

A. Yes, any of these plastics, using the ground wood filler of the kind of wood you wish to imitate will take the figuration of any carved moulding and in that way represent an imitation wood, lacking only the grain that a wood would show. [240]

Q. Do I understand that this composition of Pierson, paragraph 4c, is suitable for shaping, or giving it a shape and having it retain that shape?

A. Yes, because he wants it of the consistency that would be suitable for statuary. In other words, that he can mould it into statuary as he sees fit.

(Testimony of Henry C. Roller—redirect.)

Q. In other words, he is to take that composition and shape it and give it the desired shape and then let it dry out and it will be a hard object of that shape that it was given while soft?

A. Yes, it would.

Q. Now, with respect to this Engineering reference, will you get that out?

A. I have it.

Q. At the top of the middle column on this page, he states that this material, made up of collodion and fine wood meal, is to have the consistency of soft putty. Does that give you any idea of the nature of the proportions that are to be used?

A. Why, yes. By "soft putty" I would immediately assume that it was the familiar glazing putty which the painters habitually use for window glass work, a mixture of whiting and linseed oil.

Q. Suppose you had a mass of collodion and a mass of wood filler, how would you make up this composition in accordance with this disclosure which he has given, a putty?

A. Well, knowing that collodion is softened or dissolved by a mixture of ether and alcohol, regarding proportions, it is not particularly clear; that is you can use two or three, or equal parts. I would use them and mix them together until I got the desired consistency. That is I would take the collodion solution and add enough wood filler until I got it thick enough.

Q. Is there anything in this Griffiths composition, is there anything that is critical about it? That

(Testimony of Henry C. Roller—redirect.)

is, do the proportions [241] of the nitro-cellulose and your wood flour and if you choose, the castor oil and resin,—is there anything critical that they must be within certain limits or have certain percentages?

A. No, I should not say that there was.

Q. What would be the difference where the proportions vary from the large quantities that he gives here when he states that he uses 23 parts by weight of filler and 77 parts by weight of solution, in lines 25 and 26 on page 1?

A. Well, he could still use a great range of proportions, a decided variation of the 23 parts by weight of filler and 77 parts by weight of solution by changing the type of filler that he used and the type of solution that he mixes in,—the solvent that he uses. For example, 23 parts by weight of a filler such as China clay would make a totally different mass. And, substituting that for wood, in that case he would alter the proportions of solvent to get the physical consistency of the mass that he wanted.

Q. Well, suppose he took 30 parts of wood filler instead of 23 and used only 70 parts of the solution. How would that differ?

A. In all probability it would still make a perfectly workable mixture.

Q. And it would be a little bit stiffer, would it?

A. Probably, using the same ingredients, but with varying proportions.

Q. Now, will the nature of the wood flour used change the composition that Mr. Griffiths speaks of?

(Testimony of Henry C. Roller—redirect.)

In other words, instead of using pine wood flour, if he uses, say ironwood flour?

A. If he uses ironwood flour, because the wood itself is denser than pine, I would expect to get a much denser wood.

Q. Would you have to use more of the iron wood than pine wood to get a putty of the same constituency?

A. Undoubtedly you would, because ironwood is so much heavier than pine. [242]

Q. Now, referring to this Thompson patent, and this formula on page 3. Do you have that?

A. I have it, yes.

Q. In that solution he has celluloid, acetic acid, alcohol and essential oils. You have two parts of celluloid in eighteen parts of solvent or liquid, prior to the introduction of the various filling materials? Isn't that true?

A. Yes.

Q. How does that compare with the Griffiths composition where he has seven parts of celluloid scrap dissolved in seventy parts of solvent?

A. It would undoubtedly make a much thinner solution, but just how thin it would be I couldn't venture anything more than a guess.

Q. Now, whether that solution is thin or not, when he makes up his plastic, does that depend on the mixture of the celluloid and solvent or does it depend on the quantity of filler which is added to it?

A. Why, you have no filler indicated here be-

(Testimony of Henry C. Roller—redirect.)

cause of the excess of solvent over your celluloid, it is so large, the ratio of 2 to 18 in the case of this Thompson's solution, the material is bound to be much more fluid than where your solvents are in a much lower ratio, as they are in Pierson's and Griffiths'.

Q. I understand this formula he gives on page 3 is merely the solution of celluloid and solvent without having any filler added?

A. Yes, just the binder.

Q. Just the binder?

A. Yes.

Q. Now, when he is going to make a paste out of it he is going to add some filler to that binder, isn't he? Is [243] that the way you understand it?

A. Yes.

Q. Now, how much filler would he add to it when he is going to cover over articles as stated in line 6, page 2 of the complete specifications there?

A. Pretty hard to state until you know what his operating conditions are, whether he wants to use it just as a cement to paste things together, or *whatever* he hopes that the solution itself will have enough penetration to form an adhesive.

Q. From his disclosure, you cannot tell, then, that there is a sufficient amount of filler added to make a sort of paste?

A. No.

(Testimony of Henry C. Roller—redirect.)

Q. Referring to this Oblasser patent, of what consistency is his composition to be, where he states in line 50 as follows: "By mixing our coating with certain substances we may obtain a sort of agglomerate susceptible of being moulded", so as to mould battery boxes?

A. There again, I would believe that he had so proportioned his ingredients that he had this putty-like material.

Q. Of sufficient stiffness so you could give it a shape and it would retain that shape, and not just flow like a liquid?

A. It would hold whatever shape it was placed into. [244]

EARL S. WEBB

being called as a witness on behalf of defendant testified:

Direct Examination

By Mr. Miller:

My name is Earl S. Webb. I live at San Bernardino, California. I am 43 years of age.

I am the President of the Webb Products Co. Inc., the intervener in this action. Webb Products Company sells a plastic composition under the name of "Duratite Wood Dough." That is the same wood dough that the Pacific Marine Supply Company was selling. The relationship between the two companies is that of manufacturer and jobber of the manufac-

(Testimony of Earl S. Webb—direct.)

turer's products. Webb Products Company is the manufacturer and Pacific Marine Supply Company is the jobber.

Pacific Marine Supply Company has nothing whatever to do with the manufacture of our products. They merely purchase and re-sell. Prior to the institution of this suit against Pacific Marine Supply Company we received a notification from The A. S. Boyle Company of this infringement of their patent. I replied to it.

Q. Have you received any reports from your customers as to allegations made to your customers that by selling your product, Duratite Wood Dough, that they would be infringing upon this Griffiths patent?

Mr. Dike: I object to that as hearsay and also as attempting to prove the counterclaim in this case, which should be set up separately; and also because by the decision of the Supreme Court in the Chandler & Price case, which has been handed down since the intervention in this case, it has been directly held that questions of unfair competition arising under the circumstances of this case are not proper subject matters of a counterclaim.

The Court: The objection to the question is sustained.

Mr. Miller: May I have an exception? [245]

The Court: Allowed.

Mr. Miller: I would like to make a brief offer of proof: I propose to prove by this witness that he

(Testimony of Earl S. Webb—direct.)

received, among other inquiries, these letters that we are inquiring about as to whether or not the continued sales by his customers of this intervener's product was an infringement of the Griffiths patent; and that these inquiries were made following representations made to the customers that there was an infringement made by the intervener's product, if the jobbers or customers continued to resell them.

I would like to have these five letters marked for identification.

(Fifteen letters were marked defendant's Exhibit A-31.)

The Court: Any objection to the offer?

Mr. Dike: I object to the offer, your Honor.

The Court: Objection sustained.

Mr. Miller: Exception.

The Court: Allowed.

In our composition, Wood Dough, we have not at any time been manufacturing this product with or including ethyl alcohol as a solvent for the nitrocellulose. We have not done so at any time whatsoever in the manufactured product of Wood Dough put on the market. We never at any time in our commercial product put on the market included as our solvent wood alcohol. If Dr. Esselen made a chemical analysis of the commercial Wood Dough such as we put on the market, it would be absolutely impossible for him to have found any ethyl alcohol

(Testimony of Earl S. Webb—direct.)

or wood alcohol in that composition unless it was put in after it left our plant.

The shrinkage of our Wood Dough is materially less than the Plastic Wood composition placed on the market by The A. S. Boyle Company.

Q. Now I hand you plaintiff's Exhibit 49 and ask you to [246] notice that crack in there. Do you have any explanation as to how that crack is produced, if it is made from your composition?

A. I have no way of knowing positively, but I have my idea about it.

If the drying process is hastened as by heat it will have a tendency to do this. Heating the composition is the only way I know how to hasten the drying because the solvents are very volatile. I would say the same thing about the cracks in plaintiff's Exhibit 50. If Wood Dough is applied to an article properly and allowed to dry naturally in the open air, shrinkage cracks like you find in these two exhibits will not occur.

Q. Now, how do you apply your Wood Dough, or recommend that it be applied? Do you recommend that it be applied in making an article say of this size, as Exhibit 39, that it be built up in layers, like Dr. Esselen testified to?

A. I would encounter no difficulty in making that sized block with one application.

Instead of building it up in one-sixteenth of an inch layers, I would merely put out Wood Dough in one lump making it slightly larger because there is

(Testimony of Earl S. Webb—direct.)

some shrinkage in the Duratite and let it dry. The fire hazard in Plastic Wood is materially greater than in Wood Dough. This block shown to me marked "Pierson C", I made and also I made the fill. It is a block of wood with an edge of it gouged out. This black portion is the fill. I made up the composition used in making that fill. I used pyroxyline, 1 part by weight; ethyl alcohol, 4 parts by weight; ether, 4 parts by weight; and powdered charcoal, 4 parts by weight. I do not clearly recall whether the fill made in that block was made with one or more applications. It was not subjected to heat in drying nor to any pressure. The only pressure that was applied was putting in the mold by hand.

I built the fill slightly larger than the surrounding [247] surface then I sanded it on a disc sander so that the fill would be even with the surrounding surface of the whole.

(The block with this fill was offered and received in evidence as defendant's Exhibit A-32. It is forwarded as a physical exhibit.)

The can now handed me contains part of a batch of material which was used to make the fill I have just discussed.

Q. Can you open that can and show its present condition to the Court?

(The witness does so.)

Q. That is in the nature of a soft, plastic mass, is it? The reason I like to make the record on this

(Testimony of Earl S. Webb—direct.)

is sometimes these cans leak and the contents get out and the contents solidify in the can. Is that what you designate as a soft, putty-like liquid?

A. Yes; I would so designate it.

(The can was offered and received in evidence as defendant's Exhibit A-33. It is forwarded as a physical exhibit.)

Comparing the composition of the fill in Exhibit A-32 with that of Plastic Wood as to its properties outside of the color, I would say that it was slightly less durable. It has a charcoal composition and Plastic Wood has a wood composition. I would say that it is not as durable when tested under extreme conditions.

This other block handed to me marked "Pier-son O" I made up the fill in that block. It was not subjected to any heat or pressure during the drying except that pressure which was applied in making the mold. Two materials were used in making the fill because there is a repair in the fill and the repair was made with a different composition from that which the main fill was made with. The main fill was made from a composition containing one part by weight of soluble cotton, which we purchase under the [248] designation of 15-20 Seconds Cotton—4 parts by weight of ethyl alcohol; 4 parts by weight ether; 2 parts by weight spruce sawdust flour. The repair material used to repair the main fill was made with recovered pyroxyline 1 part by weight; ethyl alcohol, 4 parts by weight; ether, 4 parts by

(Testimony of Earl S. Webb—direct.)

weight; sawdust flour, 2 parts by weight; resin gum, one-twentieth of one part by weight.

Q. I will ask you to take a pencil and outline where the repair fill is in the main fill.

A. I gouged it out to make a number of fills there, so as to leave a place near the auxiliary composition to be used.

The main fill is the one that lies next to the wood grain that you can see, and the repair fills are those that are surrounded by pencil marks. The purpose in making these repair fills was to show the ability of this composition to make small repairs. That was the purpose I had in mind.

(The block was offered in evidence as defendant's Exhibit A-34. It is forwarded as a physical exhibit.)

In Exhibit A-34, the main fill was made with 15-20 Seconds Cotton and the small repair fill was made with recovered pyroxyline and resin gum. There is no other difference between the two fills. There is no material difference between the two fills made with the two different compositions. They are both very similar to fills made with Plastic Wood. The material in this can is part of the material that was used to make the main fill in block, Exhibit A-34.

(The can was offered and received in evidence as defendant's Exhibit A-35. It is forwarded as a physical exhibit.)

Mr. Miller: Q. Will you open this can and show the contents of it to the Court and counsel?

(Witness does so.)

(Testimony of Earl S. Webb—direct.)

Mr. Miller: Q. The present condition of the contents [249] of that can is putty-like or plastic?

A. It is.

This block marked "Pierson S", I made up. I made the composition of the fill there. It is made with one part by weight, 15-20 Seconds nitrated cotton ethyl alcohol, 4 parts; ether, 4 parts; spruce sawdust flour, 2 parts; castor oil, one-fortieth of one part. No heat or pressure were involved in drying that fill. I made some fills in this part with a slightly different composition.

(The witness then outlined with a pencil the fills that were made in the main fill.)

The fills that were made in the main fill were made of one part by weight, 15-20 Seconds Cotton; 4 parts by weight ethyl alcohol; 4 parts by weight, ether; 2 parts by weight, spruce sawdust flour; one-fortieth of one part resin gum.

(The block was offered and received in evidence as defendant's Exhibit A-36. It is forwarded as a physical exhibit.)

This can marked "Pierson S" and which I now open contains a composition made of 15-20 Seconds cotton, 1 part by weight; ethyl alcohol, 4 parts by weight; ether, 4 parts by weight; spruce sawdust flour, 2 parts by weight; castor oil, one fortieth *by* one part by weight. This composition was used in making the main fill in Exhibit A-36.

(The can was offered and received in evidence as defendant's Exhibit A-37. It is forwarded as a physical exhibit.)

(Testimony of Earl S. Webb—direct.)

The block marked "Pierson Q", I made up. The main fill is made of a composition of one part by weight, 15-20 Seconds soluble cotton; 4 parts by weight, ethyl alcohol; 4 parts by weight, ether; 2 parts by weight, spruce wood flour; one-fortieth of one part by weight of resin gum which is, by the way, ordinary pine resin. The small fill which I have superimposed on this main fill was made using recovered pyroxyline, one part [250] by weight; ethyl alcohol, 4 parts by weight; ether, 4 parts by weight; spruce sawdust four, 2 parts by weight; rosin gum, one-twentieth of one part by weight.

Q. Will you surround the small fill with your pencil, marking the superimposed from the main fill?

A. They are quite irregular and I would not make any attempt to be accurate, but I will put them as close as possible.

(The block marked "Pierson Q" was offered and admitted in evidence as defendant's Exhibit A-38. It is forwarded as a physical exhibit.)

This can marked "Pierson H" contains some of the composition that was used to make the small fills or repair fills in Exhibit A-38.

(The can was then opened and shown to the Court and offered and received in evidence as defendant's Exhibit A-39. It is forwarded as a physical exhibit.)

The material in this can now handed to me is the material used in making the main fill in Exhibit A-38.

(Testimony of Earl S. Webb—direct.)

(The can was opened and shown to the Court and offered and admitted in evidence as defendant's Exhibit A-40. It is forwarded as a physical exhibit.)

The main part of this object now handed to me was made by taking one part by weight of 15-20 Seconds nitrated cotton; 4 parts by weight, ethyl alcohol; 4 parts by weight, ether; one-fortieth of one part by weight resin gum; 2 parts spruce wood flour. That was made into a plastic mass and I took a small portion of it and just squeezed it out in my hand to make a little wedge stick out of it and let it dry, and when it had dried I sanded off the edges so that I could get the turning lathe to take hold of it, put it in the lathe and turned a little shape out of it. It had some imperfections after it had been [251] turned down to this shape, and I filled those imperfections with two other compositions, which I have noted here on this card and then I put it into the lathe and turned it down again so as to turn down the fills. In shaping the article prior to its drying and turning, I took just a small quantity of the composition and squeezed it out in an irregular shape so that it would be suitable for turning.

There are some additional fills in that wood turning. One is black and the other is white. The composition of the black fill is one part by weight, 15-20 Seconds cotton; 4 parts by weight of ethyl alcohol; 4 parts by weight of ether; 2 parts by weight of powdered charcoal; one-fourth of one part by weight of resin gum. The composition of the white fill is

(Testimony of Earl S. Webb—direct.)

one part by weight of nitrated cotton; 4 parts by weight of ethyl alcohol; 4 parts by weight of ether; 4 parts by weight of powdered chalk. There was no heat or pressure involved in the drying of this wood turning except as I have described in making it an oblong shape.

(The piece of wood was then offered and received in evidence as defendant's Exhibit A-41. It is forwarded as a physical exhibit.)

In this block marked "Pierson S", the main fill was made with one part by weight of 15-20 seconds cotton; 4 parts by weight of ethyl alcohol; 4 parts by weight of ether; 2 parts by weight of spruce wood flour mixed into a mix. The repair fill was made by using one part by weight of 15-20 Seconds cotton; 4 parts by weight of ethyl alcohol; 4 parts by weight of spruce wood flour; one-fortieth of one part by weight of resin gum. It is very difficult to outline with pencil the repair part in this fill but I will do the best I can.

(The block marked "Pierson S" was offered and received in evidence as defendant's Exhibit A-42. It is forwarded as a physical exhibit.) [252]

This block marked "Pierson J" had the main fill made with one part by weight of recovered pyroxyline; 4 parts by weight of ethyl alcohol; 4 parts by weight of ether; spruce sawdust flour, 2 parts by weight. The repair in this particular exhibit was made with the same material out of the same can.

(Testimony of Earl S. Webb—direct.)

(The block marked “Pierson J” was offered and admitted in evidence as defendant’s Exhibit A-43. It is forwarded as a physical exhibit.)

This can handed to me contains the contents from which the fill in the exhibit was made.

(The can was offered and received in evidence as defendant’s Exhibit A-44. It is forwarded as a physical exhibit.)

I made up one specimen of a compound according to the Pierson patent using instead of wood flour, sand. I made up this block. I used in the fill, one part by weight, recovered pyroxyline; 2 parts by weight, ether; 4 parts by weight; ethyl alcohol; and 10 parts by weight, sand. The block is marked “Fill Made with Pierson.”

Q. That is to represent the character of the composition that is mentioned in the Pierson patent where he states that he takes plastic, 1 part; alcohol, 4; ether, 2; sand, 5, in this second paragraph in column 1, page 3.

A. This is to represent the sand mixture, as I recall it.

The reason I used 10 parts of sand instead of 5 was the fact that the weight was so heavy 5 parts didn’t give enough body to use for that purpose,—that is, to use it satisfactorily for that purpose.

(The block was offered and received in evidence as defendant’s Exhibit A-45. It is forwarded as a physical exhibit.)

(Testimony of Earl S. Webb—direct.)

This can contains the mixture above-described using sand. [253]

It was stipulated that at the time that the can was opened to show the contents that there was a free liquid on top of the heavier substances.

(The can was offered and admitted in evidence as defendant's Exhibit A-46. It is forwarded as a physical exhibit.)

Referring to the free liquid found on top of the contents of the can, I have found such a liquid on many occasions in Plastic Wood when it has stood on the shelf in a store a considerable length of time. It is not true of our own product Wood Dough. The free liquid is the base or what in our plant we term the base with which the plastic was made.

Q. Is that free liquid which you see there due to the fact that the filler tends to settle out of the composition when it is allowed to set or rest for a considerable length of time in one position in the can?

A. Why, we term it precipitation, and that is what caused it, precipitates it inwards.

That is, it settles to the bottom of the can and the liquid tends to go to the top in the case of the sand filler as here it is somewhat more pronounced than when you have wood filler.

I made up a composition corresponding to Pierson's description of a calcareous compound in which he takes plastic or nitro-cellulose one part; alcohol, 4 parts; ether, 2; and chalk 1 to 4.

(Testimony of Earl S. Webb—direct.)

This block containing a white fill was made by me. The ingredients of the fill are recovered pyroxyline, 1 part by weight; ethyl alcohol, 4 parts by weight; ether, 2 parts by weight; chalk which was purchased from a drug store as U. S. P. precipitated, 4 parts by weight. This composition handles very much the same way as Plastic Wood. The fill was air dried without [254] any pressure during the drying. There is some shrinkage that occurred in making this fill and I did not build it high enough for proper sanding so that when it was sanded down, the rough part indicates the top of the original fill. The fill originally was made higher to allow for some sanding and when this was sanded off it had not been built up high enough to allow the sanding to take off some of the material all the way across and it shows the original surface.

(The block was offered and admitted in evidence as defendant's Exhibit A-47. It is forwarded as a physical exhibit.)

This can contains some of the material that was used in making up the fill in defendant's Exhibit A-47.

(The can was offered and admitted in evidence as defendant's Exhibit A-48. It is forwarded as a physical exhibit.)

This little block was made by me. The material used was recovered pyroxyline, one part by weight; ethyl alcohol, four parts by weight; ether, four parts by weight; spruce sawdust flour, four parts

(Testimony of Earl S. Webb—direct.)

by weight. The sawdust flour which we used in these experiments were bought from the Scott-Brown Sawdust Company in Los Angeles, under the designation "fine sawdust flour." It is very fine sawdust or very fine particles of wood. We buy it under that designation from the Scott-Brown Sawdust Company.

I shaped this block of wood roughly by using an ordinary putty knife. Then it was sanded off on a disc sander to smooth up the sides slightly. The top was left just as it was moulded by hand pressure and the use of an ordinary putty knife. It was allowed to dry without heat or pressure being applied during the drying.

I drove the nails or staples into the block. I had no trouble driving them in. The block worked just about the same as wood. I could not see any material difference. [255]

(The block was offered and admitted in evidence as defendant's Exhibit A-49. It is forwarded as a physical exhibit.)

This can contains some of the plastic composition that was used in making up defendant's Exhibit A-49. (The can was offered and admitted in evidence as defendant's Exhibit A-50. It is forwarded as a physical exhibit.)

I made up a mold using the contents of Exhibit A-50. This little rabbit is an object molded out of the contents of the same can. The mold that I used was a little lead cookery mold that I bought from

(Testimony of Earl S. Webb—direct.)

the Los Angeles Restaurant Supply Company. It was made in two parts. The composition was shaped into the two body parts and then they are squeezed together and the cohesion holds the object together and the mold is opened and the object taken out the object was taken out immediately after being pressed and then set out to dry.

(The molded rabbit was then offered and admitted in evidence as defendant's Exhibit A-51. It is forwarded as a physical exhibit.)

The Court: Before you go to that, I notice one where you used the charcoal seems to give off a great deal more of a smell of ether than any of the others. Is there any more ether in the proportions in that one?

A. I would have to check to answer your Honor. I do not believe there is, however. We have two parts ether and four alcohol and I think some of them have that condition reversed, but I would not say that definitely.

I am not enough chemist to answer intelligently whether there is anything about the charcoal that would promote the drying faster and throw off the solvent. The charcoal, however, I assume does not absorb as much of it as would the wood particles. That would be the only explanation I can give. I am not enough chemist to answer that intelligently. I don't [256] recall that in drying that it dried any faster because I was making a number of these

(Testimony of Earl S. Webb—direct.)

things at one time and I paid no particular attention. I was carrying on a number of them at the same time.

Turning to the disclosure in the Merrick patent, I made this block. The ingredients I used in making up the fill were reclaimed pyroxyline, one and one-half parts by weight; acetone, four parts by weight; ethyl alcohol, two parts by weight; ground spruce, two parts by weight; powdered cork, one part by weight. The block was dried in the same way as the other fills, that is filled up, allowed to dry, and sanded off.

(The block was offered and received in evidence as defendant's Exhibit A-52. It is forwarded as a physical exhibit.)

This can contains some of the composition used to make up the fill, in Exhibit A-52. (The can was offered and admitted in evidence as defendant's Exhibit A-53. It is forwarded as a physical exhibit.)

Q. Did you make up a composition according to Merrick, substituting wood flour in place of powdered cork?

A. I made this object here. I don't recall just what I substituted. I made it up by this formula which is arranged here, which is: film scrap, pyroxyline film scrap, two parts by weight; acetone, four parts by weight; ethyl acetate, four parts by weight; ground wood fibre, two parts by weight; ground asbestos, one part by weight.

I drove the nail and screw in that to show that these could be driven. (The object was offered and

(Testimony of Earl S. Webb—direct.)

received in evidence as defendant's Exhibit A-54. It is forwarded as a physical exhibit.)

In making up this small wood turning, I made a composition using film scrap, two parts by weight; acetone, four parts by weight; ethyl acetate, four parts by weight; finely [257] ground wood, two parts by weight; ground spruce, one part by weight. I took that plastic material which I had made and just squeezed that in my hand, allowed it to dry, put it on a lathe and turned it down to the shape in which it now is. Then I put it in a vice, drilled a small hole in the end of it, and then put in a slightly larger screw and screwed it in the fill. I roughly shaped it by turning it in a small wood turning lathe. Before putting it in I just made a little oblong shape so it would dry and then turned it down in the lathe. (The wood turning was offered and admitted in evidence as defendant's Exhibit A-55. It is forwarded as a physical exhibit.)

I made up a composition to represent the Oblasser disclosure. In this block there are two fills. The main fill was made with the composition of Oblasser patent No. 19,242. It contains, one part by weight, 15-20 Seconds cotton; acetone, four parts by weight; ethyl alcohol, two parts by weight; spruce wood flour, three parts by weight. I made that into a plastic composition and made the main fill and I knocked out part of it and filled it with Pierson's composition having the formula; reclaimed pyroxyline, one part by weight; ether, two parts by weight; ethyl alcohol, four parts by weight; castor oil, one-twenn-

(Testimony of Earl S. Webb—direct.)

tieth of one part by weight; lead oxide, one-twentieth of one part by weight; powdered quartz, seven parts by weight. This last composition made the white fill.

(The block was offered and received in evidence as defendant's Exhibit A-56. It is forwarded as a physical exhibit.)

The contents of this can was what I used to make the main fill in Exhibit 56. (The can was offered and received in evidence as defendant's Exhibit A-57. It is forwarded as a physical exhibit.)

I made up a wood turning from the contents of that [258] can. I took some of the contents in my hand and made a little oblong shape and left it to dry and then I put it on a lathe and turned it down, In doing so there was an imperfection on one side caused by its not being filled in that side. I filled this with another composition, put it back in the turning lathe and re-turned it to finish up the fill which I had made. The fill and the material below were all made of the same material but the fill was put on at a little later time.

(The wood turning was offered and received in evidence as defendant's Exhibit A-58. It is forwarded as a physical exhibit.)

I made up this small block. The ingredients I used were: One part by weight, nitrocellulose; four parts ethyl acetate; four parts alcohol; one-twentieth of one part ester gum; three parts by weight of sawdust flour. I drove the nail and screw in it.

(Testimony of Earl S. Webb—direct.)

It is sanded off one one side of the fat side and two sides of the thin side.

(The block was offered and admitted in evidence as defendant's Exhibit A-59. It is forwarded as a physical exhibit.)

I made up this block and fill myself. I used in making the fill, one part by weight of nitrocellulose; four parts by weight of acetone; two parts by weight of ethyl alcohol; one-twentieth of one part, resin gum; and three parts, spruce sawdust flour. It was dried without heat or pressure and sanded off in the same way.

(The block was offered and received in evidence as defendant's Exhibit A-60. It is forwarded as a physical exhibit.)

Referring to the Bussy or Thompson patent, I made up this fill in this block. I used two parts celluloid; seven parts acetone; one-fortieth of one part ester gum; one-fourth of one part resin; one-half of one part castor oil; two parts ground oats; one part asbestos fibre; two parts good beet pulp [259] two parts dried vegetables. The dried vegetables was a composition sold under that designation by Claypool & Company, seed dealers in San Bernardino. The patent calls for dried vegetables, and I went up to Mr. Claypool's store and asked him if he had anything of that kind and he said he did, and I bought a small quantity of it. This composition was dried without heat or pressure.

(The block was offered and received in evidence as defendant's Exhibit A-61. It is forwarded as a physical exhibit.)

(Testimony of Earl S. Webb—direct.)

This small block I made myself. The ingredients used in the composition to make up the block were: two parts by weight of celluloid scrap; seven parts by weight of acetone; one-fourth of one part by weight resin gum; one-fourth of one part by weight ester gum; six parts by weight walnut shell flour; one-half of one part by weight castor oil; one part by weight ground asbestos; one part by weight talc. These ingredients were mixed up into a plastic composition. I shaped the block roughly on a piece of glass off the library table by the aid of an ordinary putty knife and by hand. I allowed it to dry and then sanded it as it now appears. I drove the nail and screw into it after it was dry. All of the nails and screws that I put into these various blocks were driven in after they had dried.

(The block was offered and admitted in evidence as defendant's Exhibit A-62. It is forwarded as a physical exhibit.)

I made up the fill in this block marked "Calsatine-A." The ingredients I used in making up that fill were: two parts cellulose; two parts by weight of celluloid; seven parts by weight of acetone; one-fourth of one part by weight of resin gum; one-fourth of one part by weight of ester gum; six parts by weight walnut shell flour; one-half of one part by weight castor oil; one part by weight of ground asbestos; one part by weight of powdered talc. This composition was dried in the same [260] way and finished by sanding.

(Testimony of Earl S. Webb—direct.)

(The block was offered and admitted in evidence as defendant's Exhibit A-63. It is forwarded as a physical exhibit.)

Turning to the Parks patent, I made this molded mass. It is made from one part by weight, reclaimed pyroxyline; three parts by weight, ethyl alcohol; two parts by weight of ether; one part by weight of cotton linters; one and one-half by weight of ground arrowroot; one part by weight of zinc white. I just squeezed the composition in my hand and let it dry to produce that shape.

(The block representing the Parks patent was then offered and received in evidence as defendant's Exhibit A-64. It is forwarded as a physical exhibit.)

The contents of this can was what was used in making Exhibit A-64. (The can was offered and received in evidence as defendant's Exhibit A-65. It is forwarded as a physical exhibit.)

Cross Examination

Mr. Dike:

The solvents that we used in Wood Dough were chemically pure acetone bought by that name. I can give you the formula as it is copied from our work sheet. It is chemically pure acetone, ester gum, gum elemi, benzol, film of three different nitrations, dibutyl, phthalate, and castor oil. We use as fillers finely ground wood fibre, 11%; inert material, 30%. You positively do not have to keep Wood Dough

(Testimony of Earl S. Webb—cross.)

cool to enable it to dry without shrinkage. If it is applied properly there will not be any cracks appearing if dried under ordinary temperatures of a hot day. I can't state the exact date when all of these various exhibits identified by me were made. They were all made within the past thirty days. No one was present during the making of them the greater part of the time. Mr. Roller was [261] present part of the time. There were other people in the building always but no one knew what was going on particularly.

In making up the various specimens to illustrate the Pierson patent, I used the type of cellulose designated on the card attached to it. It is different in some cases than in others. The reason I changed was because I was instructed to do so by our attorneys. There is some variation as to the solvent as indicated on the cards. The reason for making this variation was in following these patents there was some variation called for and we wished to demonstrate the effect that the variation of the solvents would have. That was the way I understood it. In certain cases I made a main fill and then filled it with another material to demonstrate the composition's ability to adhere both to its own composition or like composition and to other objects, and also in some instances to fill some defects which appeared in making them up because some of them were imperfect and I merely filled them up with other materials and designated the ones that I employed.

(Testimony of Earl S. Webb—cross.)

I have not presented all of the specimens which I made at this time. We made quite a few others. I would say a great many others. I don't recall just how many but easily as many more as are shown here.

I haven't produced the other letters of the alphabet as I recall. I believe we made up such samples in going from one extreme range as to as far as we went with the other. I don't know just what extremes we did go to but I know we went, generally speaking, to the extreme range both ways of the materials or quantities called for in the specifications. We went to both extreme ranges and then made some specimens intermediate of the ranges. We did not select one particular composition or group of proportions and make up that alone as the only one because that would not have shown the range which was called for. I know that [262] all of these compositions in this particular range would show approximately the same because the ingredients were all generally nearly the same there would not be a great deal of material difference. I can't truthfully tell just when I first came in contact with Plaintiff's Plastic Wood. I believe it was about 1925. The first I recall having any occasion to get a copy of the Griffiths patent was when we were notified that a patent was issued. I would not be positive about that. It was soon after, I don't recall how soon. I have attempted to study the patent carefully and I was fully familiar with it before I

(Testimony of Earl S. Webb—cross.)

made any of these specimens. Defendant's Exhibit 43, which is the composition made with charcoal, is not about the consistency of heavy black sand. I would say it is considerably heavier.

I filled the cavity in Exhibit A-32 in very much the same way that you describe filling a piece of material the other day with Plastic Wood by building it up in thin layers, allowing each one to dry, and after it dried, putting on some more until I had built it up to slightly higher than the surface I desired, and then when it had dried thoroughly, I sanded it off. The section in this fill is flat all the way across. It was chiseled out, sanded down the full depth, and then chiseled out flat across here.

The material in Defendant's Exhibit A-48 is still liquid. It is a heavy paste but it flows. It has a certain degree of flexibility. It has some rigidity yet it has a certain amount of flexibility. I would say it would approximate the rigidity of soft wood, sugar pine or something of that kind. I made this material by taking these various materials which are mentioned in Merrick's specifications and by making them up in the various proportions I found it would make a plastic mass of various proportions by adding more solvent or less solvent, or more filler or less filler, or various kinds of filler. I made quite a number [263] of experiments that were satisfactory and I would not say how many I made. I have made numerous experiments with numerous patents which I have examined. We made several

(Testimony of Earl S. Webb—cross.)

experiments before we made the specimens of the Merrick composition, and the first ones we made were oftentimes just as satisfactory as we made later because we were going all the way down the limits of the possible combinations. Exhibits A-54 and A-55 are not flexible. They are not made with flexible materials.

Referring to the Oblasser patent, I arrived at the proportions used in making specimens A-56, A-57, and A-58, by the same method I have just discussed. By referring to the last paragraph of the first page where it says, "The agglomerate is constituted by a paste composed of any suitable solid materials, such as asbestos, pounded glass or sandstone, sawdust or cork waste; cork powder, metallic powder or oxide, amylum, resin, pulverized carbon or the like mixed with above-mentioned liquid coating." I have made up more than one mixture under Oblasser. I can't recall the number but I made up a number. Exhibit A-60 which is marked "L-1 Oblasser" I believe was so marked because it refers to the nitro-cellulose mixture as one of them used nitrated cotton and the other was film scrap as I recall. I don't say positively as to that. The marking was to differentiate between the two types of nitro-cellulose used.

Referring to the Thompson or Bussy patent, the information is briefly given on the second page which reads,

"This invention has for its object the manufacture of a water-resisting and impermeable

(Testimony of Earl S. Webb—cross.)

paste-gum or coating which is obtained by means of celluloid dissolved or simply softened by one or more suitable solvents such as acetone, acetic acid, ether, alcohol, or the like, pure or mixed, and in this case with the addition of other suitable substances dissolved or otherwise, such as resin, oil, gums, waxes, or the like, [264] vegetable refuse or even talc, chloride of magnesium, mineral or organic salts, vegetable, mineral or animal powders, et cetera.”

I didn't say I got the proportions there. I said I got the information which would enable me to get the proportions that way. I would not be able to tell accurately how many mixtures I made up in accordance with the Bussy patent. I made up a number. The material in Exhibit A-55, I didn't say could be used with a putty knife. It contains unground cotton linters.

Q. In all these materials which you have made up, this entire collection—I have gone through it and I find that in every instance you use either two or four parts of filler except, if I am correct, in A-46, which is under the Pierson patent. Why didn't you use other proportions, for instance three parts or eight parts of filler?

A. Well, I found that two to four parts, and right around in that range, made a very satisfactory filler. It was the logical amount to use to produce the plastic which is discussed in the patent, in the

(Testimony of Earl S. Webb—cross.)

specifications. That is within the range that was given in these specifications.

Q. And if you went outside of that range you did not get a satisfactory material?

A. I wouldn't say that it would. Depend on what you were wanting. If you wanted a material for molding, you would add slightly more of the wood filler; and I think that the specifications on the molded articles there show that slightly more filler was used, just a slight amount more, necessarily.

Redirect Examination

By Mr. Miller:

The A. S. Boyle Company puts out a solvent for use in [265] connection with their Plastic Wood. I purchased some of it this morning. This is the can I purchased. I bought it at the Washington Hardware Store here in Tacoma. The directions on the can read:

“Directions. If Plastic Wood or Plastic Wood White Waterproof Tile Cement hardens in the can from exposure to the air, pour in a little Plastic Wood solvent. Replace the cover tightly and allow to stand over night. If sufficient solvent has been added, the contents will be restored to its original plastic condition. Use solvent to clean hands or tools after working with Plastic Wood. Keep can tightly closed when not in use.”

There is nothing on the can to indicate what the original plastic condition of Plastic Wood shall be

(Testimony of Earl S. Webb—redirect.)

or was. I purchased this package this morning in Sears Roebuck. I have preserved it in the manner in which I obtained it.

Q. I will ask you to open this tube. I would like to have it appear in the record that this tube is hermetically sealed and this witness will now open it. I would like to have you open it and on a piece of paper squeeze some out onto a piece of paper to demonstrate the pasticity of that composition,—the plasticity or fluidity of that material.

(Witness does so.)

I do not believe that you could mold with that material.

(The witness then removed some of the contents of plaintiff's Exhibit 36 and placed it on the paper by the side of what was removed from the tube.)

Q. Will you state how the consistency of what was in the tube and what was in the can compare?

A. Well, it doesn't compare very favorably. The material in the can is of a much heavier consistency than the other material. [266]

This block that is stamped "Duratite Wood Dough" contains a fill that I made. It is made of Duratite Wood Dough which is our product as put on the market. This fill was dried in the same way as other examples of the fill made in accordance with Pierson, Merrick, and others with the exception that those made with whiting and charcoal were made by the successive applications of thin layers. The other fills were all made in one application.

(Testimony of Earl S. Webb—redirect.)

(The block of wood stamped "Duratite Wood Dough" was offered and received in evidence as defendant's Exhibit A-66. It is forwarded as a physical exhibit.)

Prior to 1920, I made a composition containing nitro-cellulose and solvent. I made plastic materials using nitro-cellulose and a volatile solvent with a finely divided wood filler when I was an enlisted man in the United States Army during the World War at Kelly Field, Texas. We made this material, using what we used as airplane dope and fine sanding dust from the planing and sanding mill and to repair chipped out parts in airplane propellers, landing gear, etc., where the stones thrown by the draft of the propeller would nick out chips and there is where I learned the formula of making this material. This was a general practice at Kelly Field, Texas, as well as at numerous other fields. The consistency of the mixture was very much the same as those we have here in the exhibits.

Q. Now, from your observation in making these various compositions that were to represent what is disclosed in the Pierson, Thompson, Merrick, Oblasser patents and perhaps others, did you observe that there was anything critical about the particular proportions that had to be used?

A. I did not. There was nothing critical about the proportions.

Q. If you used more or less nitro-cellulose would that [267] affect the composition in any material respect?

(Testimony of Earl S. Webb—redirect.)

A. Well, within certain ranges. If you got outside of these ranges it would affect it.

As long as you did not take absurd proportions you would get practically the same result. As to the solvent in the finished result the solvent made no difference because the solvents were all evaporated. The fillers made some difference. For instance, if you wanted to fill a small cavity or fine crack, it would not be made as heavy as if you wanted to fill a big knot hole.

I have taken a composition representing the Merrick patent, such as was used to make Exhibit A-52, and pressed it out into a thin layer and allowed it to dry. I tested the composition after it had dried to determine its flexibility. It had a certain degree of flexibility closely approaching that of heavy sole leather. All of the compositions that I made which were within the approximate ranges of those representing the Thompson, Merrick, Pierson, and Oblaser patents employing the cellulose filler were suitable for patching up wood. By the term "approximate range", I would say from one to three or four parts either way of materials or solvents or nitro-celluloses as used, depending upon the relative quantities of the various materials. If we have a composition made here with nitrocellulose, four; ether, four; alcohol, four; and a cellulose filler, the filler might have been increased up to six or eight, or decreased down to two or three, or could be increased to even a greater degree by using certain

(Testimony of Earl S. Webb—redirect.)

types of very compact materials. With the proportions by weight you could increase the range even to that extent. For instance, I have found that the walnut shell flour will weigh approximately twice as much per given bulk as the same bulk will weigh of spruce flour. In other words, one pound of walnut flour would take up no more room than one-half pound of lighter material. [268]

Recross Examination

By Mr. Dike:

As to what took place at Kelly Field, I am speaking entirely from memory.

The Court: It will be understood, then, that the time will be divided equally between direct and cross examination of this witness, from now until 12 o'clock.

Mr. Miller: It is perfectly agreeable to me. I want to read this *dedimus potestatum*, but as I gave warning in my opening statement, I want to preserve my objection to the introduction of that deposition for any purpose in this case, and also to preserve all my rights to object to the interrogatories that were propounded by the plaintiff's counsel. Now, the order that granted that specifically provided that these objections should be deferred until the time of offer, and I want it distinctly understood in this connection.

DR. GUSTAVUS J. ESSELEN,

recalled in rebuttal testified as follows:

Direct Examination

By Mr. Dike:

Q. You are the Dr. Esselen who has already testified in this case?

A. Yes.

Q. You have heard Mr. Webb and Mr. Roller testify as to the Merrick patent, as to certain experiments or specimens which have been made, purporting to be in accord with the Merrick patent. What have you to say?

Mr. Miller: I object to that question as too indefinite. I don't know what he is calling for.

The Court: Objection overruled. [269]

Mr. Miller: Exception.

The Court: Allowed.

A. The Merrick patent, as it states at the heading, is for a filler for shoe-bottoms.

Just as your Honor knows, generally men's shoes are made in such a way that there is a heavy outer sole and an inner sole; and in welt shoes there is a space between the outer sole and the inner sole because of the fact that the inner sole is supported all around the edges by the welt, and that leaves a hollow space in there which is ordinarily filled up by a composition, ordinarily referred to as a shoe-bottom filler.

Now, as described by Mr. Merrick, there are certain essential properties in a shoe bottom filler; one is that it shall have a certain amount of elas-

(Testimony of Dr. Gustavus J. Esselen—rebuttal—direct.)

ticity or resiliency so that when the weight of the foot goes down on it, it is not hard. The second essential requirement, and even more important, obviously, is flexibility so that when you walk, the bottom of the shoe will give with the movement of the foot. And in two places here in the patent, one in line 30 and again in line 68, the quality of flexibility, a permanent flexibility, in line 68, is referred to.

Now, the Merrick patent gives no proportions. It merely states the ingredients which are to be used in the material, but it emphasises, as I say, that the material shall be flexible. It says what it shall be made out of: "My invention consists in a plastic composition comprising essentially a solution of pyroxyline,——"

The Court: Define that, if you will.

A. Nitro-cellulose. "——a suitable base consisting preferably of ground cork and asbestos filler or other fibrous material. The solution of pyroxyline serves as a binder or [270] cement,——" and so on.

Now, in accordance with that description, and bearing in mind that these shoe fillers are ordinarily always made of ground cork as we have stated here, I have made up a sample in accordance with the Merrick patent, which is permanently flexible, made from ground cork and the other constituents which are here, and this is a sample of the material.

(Testimony of Dr. Gustavus J. Esselen—rebuttal—direct.)

(The specimen presented by the witness was offered and received in evidence as plaintiff's Exhibit 58. It is forwarded as a physical exhibit.)

Q. Now, will you refer to the Oblasser patent and make such comments on that and on the testimony that you have already heard as you think desirable?

A. In the Oblasser patent again, no proportions are given. There are three distinct features to the Oblasser disclosure. The first is a coating for battery boxes, for the inside of bottery boxes, to make them waterproof. That coating he describes as being made of nitro-cellulose with or without camphor, dissolved in ether, acetone or other suitable solvent.

That coating liquid, from the language of the patent, it seems to me must necessarily be a free-flowing liquid like a paint, as it is described as being applied by a brush or roller. It has no filler in it.

Now, the second feature of that Oblasser patent is an agglomerate, which is made by mixing this coating liquid with a filler. The purpose of the agglomerate, as described in the patent, is to make battery boxes directly from this molding.

Now, if you are going to make an article like a battery box which is open only on one end or one side, it is obvious that you cannot use a mixture for that purpose which has an appreciable amount of volatile solvent left in it. When it refers to making

(Testimony of Dr. Gustavus J. Esselen—rebuttal—direct.)

battery boxes by moulding, it must necessarily [271] refer to the mechanical operation of moulding under pressure, probably also with the aid of heat, because if one were to rely on shaping the box first and then allowing it to set up by the evaporation of the volatile solvent, there would necessarily be warpage during the drying, for the simple reason that the volatile solvent would dry out much more freely from the outside of the box than it would in the inside space, in the inside of the box, and that would necessarily result in warping. Therefore, what is described here must be a very stiff mixture which is moulded by mechanical processes under heat and pressure.

The third feature of the Oblasser patent is simply a cover for battery boxes, which cover is made, essentially, of a piece of transparent celluloid.

Q. Now, will you refer to Hubbard's book on "The Utilization of Wood Waste", the three paragraphs to which Mr. Roller referred and make such comments on that as you think necessary?

A. First, on page 8 of Hubbard's book on "The Utilization of Wood Waste" it reads as follows: "The use of sawdust in combination with binding and cementing substances, such as glue, albumen, blood and resin to form plastic materials or so-called artificial wood is already somewhat old and well-known."

Now, if one were to make an artificial wood, using glue, albumen or blood obviously the finished product

(Testimony of Dr. Gustavus J. Esselen—rebuttal—direct.)

would be affected by atmospheric conditions, depending upon the moisture or whether exposed to water. If it were made up with resin it obviously would have to be heated to be rendered plastic and capable of being used. And when it cooled it would harden and become brittle. It would not be the character of material at all with which we are dealing here in the Griffiths patent.

Then, on page 10 of the same book the statement is made: "Sawdust of any sort may also be used in making plastic [272] cements for filling up defective places in woodwork, and it is advantageous for this purpose to use the sawdust of the same kind of wood as that to be filled."

There is a very general statement with no directions given as how to do it or what the binder is or anything else.

On page 178 there is a paragraph which again gives no proportion and which reads as follows: "In the manufacture of a plastic composition which can be moulded F. Matas y Rodes (French patent 349,762, 1904) employs sawdust or shavings mixed with a solution of nitro-cellulose in methyl alcohol for the purpose of binding the particles together. The material is pressed in heated moulds, which are constructed of perforated sheet metal or wire gauze in order to allow the solvent to escape."

Now, this, obviously, is quite different from Griffiths' patent, because this is what is known as a

(Testimony of Dr. Gustavus J. Esselen—rebuttal—direct.)

hot moulding composition, where it is put in a hot mould and formed under heat and converted into such a condition that when it cools it solidifies. This is a hot moulding composition, quite different from Griffiths'.

Those are the three paragraphs to which reference was made.

Q. What have you to say as to the "Engineering" publication?

A. The reference in "Engineering" is on page 785 of the issue for December 9, 1921, and the first paragraph contains the following statement, after referring to a new material named by the firm, "Plastic Wood", it describes it as follows: "It is a collodion preparation made with very fine wood meal, and as supplied ready for use is of the consistency of soft putty, and of much the color of deal."

Now there again, aside from the expression that it is "a collodion preparation" and saying that it contains very fine wood [273] meal, no information is given as to how the consistency of putty is obtained. It might, for example, be obtained by using a relatively thin solution of nitro-cellulose with a low nitro-cellulose content and using a considerable portion of wood meal. If that were done, the resulting product would be quite crumbly and weak, because it would not have the necessary strength, although it would have the consistency of putty.

(Testimony of Dr. Gustavus J. Esselen—rebuttal—direct.)

On the other hand the same “consistency of putty” might be obtained by using a collodion solution, which is fairly heavy in its content of nitro-cellulose, which would only permit a relatively small amount of wood filler to be incorporated with it to get the consistency of putty, in which case, when it had dried down there would be a very considerable amount of shrinkage and the product would not bear much resemblance to wood.

Q. You heard Mr. Webb’s testimony as to the sale by The A. S. Boyle Company of additional solvent for use with Plastic Wood. Will you explain why that is necessary, if you know?

A. Yes. I wonder if I may see that exhibit?

Mr. Dike: Weren’t these offered?

Mr. Miller: Yes, they were offered, certainly—supposed to have been. I would like to make the offer now if they have not been. I offer both the solvent and the tube.

Mr. Dike: I make no objection to the lateness of the offer.

(The sample of Plastic Wood Solvent was offered and received in evidence as defendant’s Exhibit A-67. It is forwarded as a physical exhibit.)

(The sample of Plastic Wood was offered and received in evidence as defendant’s Exhibit A-68. It is forwarded as a physical exhibit.) [274]

In other words, that is put out for the convenience of the buyer because when a carpenter or other

(Testimony of Dr. Gustavus J. Esselen—rebuttal—direct.)

person is using Plastic Wood it is not always convenient to put the cover on absolutely tight. In other words, there is a slow drying out of the material in the can which is unavoidable, and in order that the material may be put back to its original condition for use, this solvent is provided and the directions for its use are provided, which specifically state that: "If sufficient solvent has been added, the contents will be restored to its original plastic condition."

And the second purpose for putting out this solvent is to clean the hands or tools after working with Plastic Wood, because it has a habit of sticking very tenaciously to the hands or the tools.

Q. Now, referring to the tube of Plastic Wood, A-68, state why, if you know, the material in that tube is slightly softer than the material in the standard cans of Plastic Wood.

A. The material is put out in the tube form for convenience in use. If it were the same material as in the can, it would not be possible to squeeze it out from the narrow opening of the tube. Accordingly, in making Plastic Wood that is put out in tube form, a small amount of the volatile solvent is added. The composition of the base is not in any way changed, and the contents of nitro-cellulose, ester gum and castor oil and wood here are in exactly the same proportion as in the form in the can. There is merely the slightly greater percentage of solvent to enable it to be easily squeezed out of the tube.

(Testimony of Dr. Gustavus J. Esselen—rebuttal—direct.)

Q. In the early part of your answer you said that the materials were the same. You meant the consistency, didn't you?

A. No, the consistency is higher in the materials in the cans, but the materials are the same.

Q. That is what I wanted to make sure. You heard [275] Mr. Webb say that the proportion of solids made no difference. What have you to say to that?

A. Well, that is a rather broad statement. In what connection, please, Mr. Dike:

Q. Mr. Webb was explaining, if I remember correctly, that the proportions of solvent to solids made no difference in the final product. Will you just explain what the proportionate relationship should be and why a material which is putty-like in the first place may not necessarily produce a satisfactory product after drying?

A. I have more or less covered that in my discussion of the "Engineering" reference. The important point is simply this: That you may secure a putty-like consistency in one of two ways: You may either secure it by taking a solution which contains a small quantity of nitro-cellulose and add a considerable amount of wood flour to it until you get the consistency of putty, but the material would not have sufficient binder in it to give you a wood-like material when it has dried. Or, you may obtain your putty-like consistency by using a more viscous

(Testimony of Dr. Gustavus J. Esselen—rebuttal—direct.)

nitro-cellulose solution which would permit only a small amount of wood flour to be added to obtain the putty-like consistency, and when that dried down there would be considerable shrinkage and it would not be wood-like when it had dried.

Q. Do you find in any of the patents or publications discussed by Mr. Roller or Mr. Webb any description which would have taught, without experimentation, how to make a material containing nitro-cellulose, finely divided cellulose filler and a volatile solvent in such proportions as to harden upon mere exposure to air to substantially the rigidity and solidity of wood?

A. I found absolutely there was no such disclosure in any of those patents. To be sure, if one started in his mind with the concept which Mr. Dike has outlined, it would then be possible [276] by considerable experimentation to find, within the limits—rather wide limits—of the proportions which are given in some of these patents, particularly the Pierson patent, a set of proportions which would correspond to the material having the properties which Mr. Dike has described. However, unless one started with that concept in mind, I find absolutely no such description in any of these patents; and in order to obtain such material it would be necessary to either have exceeding good fortune and happen on such a mixture by chance, or else to carry out a long series of experimentations to find

(Testimony of Dr. Gustavus J. Esselen—rebuttal—
cross.)

that composition which would correspond to that
concept.

Cross Examination

By Mr. Miller:

Q. Now, what is in this Exhibit 58, Dr. Esselen?

A. Well, there is——

Q. Do you have your notes on that?

A. I think I do. That sample was made up from
nine grams of nitro-cellulose, which was wet with
three grams of denatured alcohol. There was added
to that 62 grams of wood alcohol—that was crude
wood alcohol.

Q. How many, 62?

A. Sixty-two. 18 grams of castor oil; 13.5 grams
of ground cork; and 2 grams of asbestos fibre.

Q. Anything else?

A. That is all.

Q. Do you call this cork material in here ground
cork?

A. I call that ground cork.

Q. Did you ever hear anybody else call that
ground cork?

A. That material was selected of that particular
degree of fineness because I happen to have seen a
number of shoe-bottom fillers in which cork of that
degree of fineness was used. That [277] is why that
was used.

Q. Now, this Pierson patent calls for ground
cork, doesn't it?

(Testimony of Dr. Gustavus J. Esselen—rebuttal—
cross.)

A. I don't remember whether Pierson—

Q. I mean the Merrick patent, under which you made that?

A. Right.

Q. And does it say, in that Merrick patent, anything about adding 18 grams of castor oil?

A. It says that the material must be flexible and able to bend, and I used that as a means of obtaining flexibility.

Q. My time is limited, and I will ask you to answer my questions as closely as you can. Does it say anything in the Merrick patent about putting in castor oil?

A. Specifically, no; but it says to add a material—

Q. (Interrupting) That is all I want.

A. —which will give permanent flexibility.

Q. What is the effect of castor oil?

A. It adds flexibility, a permanent flexibility to a compound which is made from nitro-cellulose.

Q. You have in that composition 18 parts of castor oil as compared to about 110 parts total, do you not?

A. Approximately that. I haven't added it up.

Q. And what is the maximum amount of castor oil that Griffiths suggests in any of his compositions?

A. I don't recall that, but I was not duplicating Griffiths at that time.

(Testimony of Dr. Gustavus J. Esselen—rebuttal—cross.)

Q. I didn't ask you that. I want to know what his maximum is.

A. I don't recall.

Q. You don't know, in other words? Is that correct?

A. No. [278]

Q. Now, when Mr. Merrick is referring here to "Other elastic material than cork may be employed as the base, as for instance finely divided wood, leather, paper pulp, etc.," he is referring to some material having the elasticity of approximately wood, isn't he?

A. As a filler, yes.

Q. Wood is not a very elastic material, is it?

A. Wood is not.

Q. You wouldn't call it that, but he designates that as "elastic", Merrick in his patent, doesn't he?

A. No, he says he uses that as a filler.

Q. Doesn't he say "other elastic material than cork may be employed as the base, as for instance finely-divided wood?"

A. That is right.

Q. And he is characterizing "finely-divided wood" as an elastic material?

A. That is right.

Q. And if he made that compound up with finely-divided wood what would he have?

A. If he made it up of finely-divided wood, he

(Testimony of Dr. Gustavus J. Esselen—rebuttal—
cross.)

would have a flexible, rubbery material approximately similar to the sample I made with cork.

Q. Have you ever made up this composition of Merrick's leaving out this loading of castor oil and using the finely-divided wood?

A. I do not think I have, because the castor oil is not "loading", Mr. Miller. It is put in there under specific directions of the patent to provide flexibility.

Q. Well, tell me where the patent told you to put in one gram of castor oil.

A. In line 30 it says that the finished product is "one that shall possess flexibility." And in line 68 it says, "It [279] remains very flexible."

Q. It does not tell you anywhere in this patent to put in one particle of castor oil?

A. It told me to put in some material which would keep the product flexible.

Q. Merrick says this material is sufficiently elastic or flexible without it, doesn't he?

A. No, I beg your pardon.

Q. He does not give you any suggestion to put any in, does he?

A. He certainly does.

Q. Where?

A. The part I have just read to you.

Q. You don't see any castor oil there, do you?

A. I beg your pardon?

(Testimony of Dr. Gustavus J. Esselen—rebuttal—cross.)

Q. You don't see any castor oil mentioned anywhere in this patent?

A. I said I did not see it mentioned specifically.

Q. Now, I will ask you to refer to this Oblasser patent and just point out where you find any suggestion in this patent of using heat and pressure in moulding.

A. On page 3, at the top of the page it reads as follows: "Under these circumstances, instead of rendering a receptacle of wood or other material tight by the application of our coating we may manufacture it directly by moulding, use being made of the said agglomerate", which I described.

Q. Where does it say anything about using heat?

A. I interpret it in that way because I do not know how it could be made, practically, in any other way.

Q. Well, you have some compositions here made up of nitro-cellulose, solvent and cork powder and sawdust that have been moulded, haven't you? [280]

A. Yes, but I haven't seen a hollow box made that way and I know, from my experience with celluloid, that if you wanted to make a celluloid box you would have to make it under heat and pressure for the reason that I have described.

Q. There is nothing stated in that patent about using pressure, is there?

A. No.

(Testimony of Dr. Gustavus J. Esselen—rebuttal—cross.)

Q. Is there anything stated here that you can put your finger on that says to use some heat?

A. No.

Q. You would not, even assuming that the patent did not tell you to do it, would you, in making up that composition?

A. No, but the patent does not tell me not to use heat and pressure, and my common sense tells me that to do it successfully you would have to use heat and pressure.

Q. Now, you said something about them warping if you did not use heat and pressure. Do you know whether or not Plastic Wood, as put out by the Boyle Company, when it dries, warps?

A. If it were moulded into a box under these conditions it would warp, for the reason that I have explained, the solvent will evaporate more rapidly from the outside than from the inside.

Q. As a matter of fact, many of these exhibits that we have here show warpage, do they not? Look at the end of this little turning, Exhibit 41. You see some warping in that, don't you?

A. There is a certain amount of shrinkage in the flat surface.

Q. And also some warping?

A. I don't call it warping. In fact, that surface looks quite flat to me. [281]

Q. How about some of these pieces that were? Do you remember them at all?

(Testimony of Dr. Gustavus J. Esselen—rebuttal—cross.)

A. These happen to have been top surfaces and there was no pains taken to avoid it after it was made, or to keep it, in fact, with an absolutely even edge.

Q. These other exhibits here, such as 37, these were sanded after they were made, weren't they?

A. Yes, they were sanded after they were made.

Q. Do you know whether they were warped prior to the sanding?

A. I don't recall.

Q. Didn't you see them?

A. Yes, but I don't recall.

Q. Now, referring to Hubbard, page 10, and to the part that you read of that page. What further instructions did you need to make up that piece of wood?

A. Well, if you mean absolute, complete instructions, there weren't any given here.

Q. Well, are you again to use the same common sense that told you you should use heat and pressure, in Oblasser or not?

A. Well, personally, I do not think the question applies here, Mr. Miller. I surely hope I used some common sense in making the thing up.

Q. If you had these directions there you would know how to make up that composition, wouldn't you?

A. This says: "Sawdust of any sort may also be used in making a Plastic Wood Cement for filling

(Testimony of Dr. Gustavus J. Esselen—rebuttal—cross.)

up defective places in woodwork.” Now that certainly makes a statement, but gives absolutely no indication as to how.

Q. How about page 8?

A. Page 8, the suggestion is made that that may be made with glue, albumen or blood, and as I have already said, as a matter [282] of fact, that if it were made with these materials it would obviously be affected by water or moisture. Or it says that it can be made with resin; and if you use resin to make it you have got to heat the resin and allow it to cool after it is in place.

Q. Now, you know how to mix up some glue and sawdust, don't you?

A. Yes.

Q. You wouldn't have to have any further directions on that?

A. No.

Q. Coming back to page 10.

A. Yes.

Q. Would you know how to mix up some sawdust and cement?

A. Yes. “Sawdust of any sort may be used in making a plastic cement,” but it does not say what binder. It may be made with wood and you could mix it with the glue or the albumen or the blood or resin.

Q. Any mixture could be used to make that, one practically as good as the other? What does it say?

(Testimony of Dr. Gustavus J. Esselen—rebuttal—cross.)

A. It says, "Sawdust may be used to make a plastic cement" but it does not say what the binder is.

Q. Referring back to page 178 in this book, in making up Exhibit 49 you used some heat, didn't you?

A. Yes, I used heat approximating that of a hot summer's day.

Q. But you used that for five days, didn't you?

A. Yes.

Q. You never heard of a summer's day lasting that long?

The Court: I don't understand that question.

Mr. Miller: Q. Why did you use heat for that length of time? [283]

A. As a matter of fact, heat was applied intermittently during the day when the laboratory was operating and shut off at night.

Q. What is the effect of adding heat to a composition of that character?

A. To speed up the drying and to hasten the evaporation of the volatile solvent.

Q. In other words, if you do not use heat it dries out slowly?

A. It dries out a little more slowly.

Q. Coming over to this Pierson patent, do you find disclosed in that Pierson—

Mr. Miller: Q. Do you find in that Pierson patent any "doughy, putty-like, plastic composition" made

(Testimony of Dr. Gustavus J. Esselen—rebuttal—
cross.)

up of nitro-cellulose in a solution” containing a volatile liquid “and a finely-divided cellulose filler in such proportions as to harden upon mere exposure to air to substantially the rigidity and solidity of wood?”

A. No.

Q. Do you find in that Pierson patent, referring to the composition he sets up for the filling, where he takes one part nitro-cellulose, four parts alcohol, four parts ether, and one to sixteen parts of saw-dust?

A. I understand you to say a composition described as having the consistency of putty before drying out and after such drying out forming a mass resembling wood. There is no such suggestion in the patent.

Q. He is going to make up a material for moulding, isn't he?

A. He says he is making it for mouldings which I *present* to be, as of the date of this patent, 1867, picture mouldings. [284]

Q. Do you find in the Pierson patent any composition which is doughy, composing nitro-cellulose in solution, containing a “volatile liquid and a finely-divided cellulose filler in such proportions as to harden upon mere exposure to air to substantially the rigidity and solidity of wood?”

A. I do not find a description of such a material as Mr. Webb has showed us. If you experi-

(Testimony of Dr. Gustavus J. Esselen—rebuttal—
cross.)

ment sufficiently you can find that there is such a mixture within these rather wide limits of “one to sixteen” parts of filler, but there is no specific suggestion of any such compound or mixture in here.

Q. Wouldn't your common sense tell you to mix up the nitro-cellulose with a volatile liquid and celluloid and add enough sawdust until you have got it of the consistency of dough, so you could mould with it?

A. He doesn't suggest that.

Q. He says you are going to make a moulding compound.

A. Not as I read it. He says it is *useful* stauary or mouldings. That may possibly imply that the statuary is to be moulding. It may be you make up a mass and carve a statue.

Q. In either case it would be a dough-like composition, wouldn't it?

A. Why, it may be or it might be something else.

Q. How would it compare with Griffiths, when Griffiths varies his regime?

A. In the Griffiths patent he specifically describes a material, the properties of which have been outlined here several times, but essentially it comprises nitro-cellulose in a volatile solvent, with a cellulose filler, of such consistency that it is putty-like before it is used, and when it dries down it dries down to the consistency of wood, and there is

(Testimony of Dr. Gustavus J. Esselen—rebuttal—cross.)

absolutely no suggestion of such a concept anywhere in the Pierson patent. [285]

Q. Referring back to the Griffiths patent, he says in lines 58 to 63: “The proportion of weight of filler to weight of solution I prefer to lie between 15 and 30 parts of filler to 85 and 70 parts of solution. On the other hand proportions outside these limits may be employed.” Now suppose we have a composition according to Griffiths in which he has his filler here, instead of 30 parts, which is the upper limit, he goes outside and goes up to 40. How would that composition compare with Pierson?

A. That all depends on what the filler is. You will notice Mr. Griffiths, in his example on page 2, uses 40 parts of filler, where he uses a mixture of wood flour and china clay and that is obviously what he had in his mind when he said: “On the other hand, proportions outside these limits may be employed.” Where he says, “15 to 30 parts” he is referring to wood flour filler and that gives the best results, I know from experiments, just as Mr. Griffiths says it does.

Q. You would not consider a wood dough that had only ten parts of filler as being satisfactory, would you?

A. It is quite satisfactory for many purposes because the proportion of wood filler to the mineral filler is *to* adjusted in the Wood Dough that the volume relationship in the Wood Dough is very

(Testimony of Dr. Gustavus J. Esselen—rebuttal—cross.)

close to the volume relationship in the Plastic Wood.

Q. How about that relationship between the mineral filler and the wood dough filler in the Griffiths patent? I understand from you that if you increase the proportion of filler to 40 or 50 or even 60 parts, that that was the “between 15 and 30 parts of wood, the balance filler,” is that correct?

A. That is now what he says.

Q. Isn't that the way I understood it a few minutes ago?

A. When he says “between 15 and 30 parts of filler” he is referring to a composition in which the filler is entirely [286] wood flour.

Q. Well, you do find in the Pierson patent, don't you, a composition composed of nitro-cellulose in a solution containing a volatile liquid and a finely-divided cellulose filler?

A. Yes, without any proportions or other suggestions given.

Q. And you find that in the Pierson patent when he uses his basis of two parts of sawdust in his mixture, in paragraph 40 that the filler is present in more than fifteen parts by weight?

A. If he uses more than two parts?

Q. Yes.

A. Yes.

Q. Anything above that would give him more than fifteen parts by weight?

A. That is right. Of course if he uses only one

(Testimony of Dr. Gustavus J. Esselen—rebuttal—cross.)

part you would have considerably less, and he says you may go up to sixteen parts.

Q. If he uses only one part that would give you 10% filler?

A. Yes, that would give you 10% filler.

Q. Which is about the same quantity that the Wood Dough has, isn't that correct?

A. No, Wood Dough has altogether, if I remember, 40 parts of filler.

Q. Well, they have ten parts of wood filler, don't they?

A. As I remember, it is 10 or 11, as stated in your answer.

Q. And how about this Oblasser patent? Do you find in that patent wherein he makes up a composition, an agglomerate, don't you find presented there a composition of nitro-cellulose in a solution containing a volatile liquid and a finely-divided cellulose filler? [287]

A. That is a patent for an adhesive cement or an impermeable coating, if I remember it.

Q. It is plastic, isn't it?

A. He advises it, as I judge, for sticking articles together, such as wood, or for covering them over with an impermeable layer, which implies a viscous liquid to apply to the cloth, because it says the mixture is usually made, while cold, by simple agitation. That means simple agitation or stirring, and if it were a paste it would require more than that.

(Testimony of Dr. Gustavus J. Esselen—rebuttal—
cross.)

Q. Line 19.

A. In the complete specifications?

Q. Yes.

A. Yes.

Q. When he refers to a "paste-gum" that would indicate a plastic, would it not, a plastic like library paste?

A. Or LePage's glue.

Q. It indicates plastic, and he has presented there a nitro-cellulose in a solution containing a volatile liquid and a finely-divided cellulose filler, hasn't he?

A. That is true, but he hasn't in any way suggested any material such as is here suggested by Mr. Griffiths.

Q. Now, do I understand you that all compositions made up of nitro-cellulose in a solution containing a volatile liquid and a finely-divided cellulose filler will not work or are unsuitable for this purpose?

A. All compositions?

Q. Yes.

A. Yes.

Q. All of them are not?

A. All of them are not.

Q. Just some of them are?

A. Right. [288]

Q. Are all plastic compositions containing nitro-cellulose in a solution containing a volatile liquid and a finely-divided cellulose filler suitable?

(Testimony of Dr. Gustavus J. Esselen—rebuttal—
cross.)

A. To a certain degree, yes.

Q. Within what degree? Can you explain that a little more in detail?

A. To put in the limitations of plastic.

Q. Yes.

A. Well, if you have too small a proportion of wood flour the thing will obviously shrink too much when it dries, but it could be used—I mean shrink too much for practical purposes.

Q. Well, all doughy, putty-like plastic compositions comprising nitro-cellulose in a solution containing a volatile liquid and a finely-divided cellulose filler in such proportions as to harden upon mere exposure to the air to substantially the hardness and rigidity of wood, would be suitable?

A. Yes, a mixture having those qualities would be suitable.

Q. And what would these proportions be?

The Court: You have taken your time.

Mr. Dike: No redirect.

Mr. Dike: I now offer in evidence the interrogatories and answers of Manfred E. Griffiths and Ernest Caizley Murray, which were taken on a *dedimus potestatum* issued by this Court, and they have been returned to the Court. It is my understanding these were taken subject to objections as

(Interrogatories for Manfred E. Griffiths—direct.)
to their admissibility and I think the whole thing depends on this question of the right to carry back the date of invention to an invention made abroad and not in the United States. That [289] is solely a question of law which I will deal with in my brief, and I suggest, if your Honor please, that the rulings on these two matters be cared for in your Honor's opinion.

Mr. Miller: That is perfectly satisfactory, if the opposing counsel wishes to propose two questions of law. That is my main objection to this Griffiths and Murray deposition; it is perfectly agreeable to handle that matter in the brief.

The Court: That is satisfactory to the Court.

The interrogatories and answers referred to read as follows:

Interrogatories for

MANFRED E. GRIFFITHS

Q1. Please state your name, age, residence, and occupation? What was your education?

A1. Manfred E. Griffiths, 57 years of age, residence: Hackneys Corner, Claydon, near Ipswich, Technical Adviser. Education: Manchester Technical College and articled pupil to an analytical and consulting chemist.

Q2. By whom are you now employed and in what capacity?

A2. By Nobel Chemical Finishes Limited in the capacity of Technical Adviser.

(Interrogatories for Manfred E. Griffiths—direct.)

Q3. How long have you been employed by Nobel Chemical Finishes Ltd., and its predecessors? During what years? Name the predecessors of Nobel Chemical Finishes Ltd., from 1918 to date.

A3. I have been employed for 35 years, 1900 to 1935. The predecessors were Nacol Industrial Colloidions Limited and the New Explosives Company Limited.

Q4. Where does Nobel Chemical Finishes Ltd., have its factory and laboratory? At which factory are you employed?

A4. Nobel Chemical Finishes Factory and Laboratory is at Stowmarket. I am employed at Stowmarket Factory. [290]

Q5. Is Nobel Chemical Finishes Ltd., a subsidiary of some other company and, if so, of what company?

A5. Nobel Chemical Finishes Limited is a subsidiary company of Imperial Chemical Industries.

Q6. Where is the home office of Imperial Chemical Industries Ltd.?

A6. Millbank, London.

Q7. Are you the Manfred E. Griffiths who is the patentee of United States letters patent No. 1,838,618 for Plastic Composition, issued December 29, 1931 on an application filed November 17, 1923?

A7. Yes.

Q8. Did you take out any letters patent in Great Britain for the plastic composition described

(Interrogatories for Manfred E. Griffiths—direct.)
and claimed in said U. S. letters patent No.
1,838,618?

A8. No.

Q9. By what name, if any, do you commonly
call the plastic composition described and claimed
in your United States patent No. 1,838,618?

A9. Plastic Wood.

Q10. Please state in full and substantial detail
the circumstances relating to the discovery of the
plastic composition described and claimed in said
patent No. 1,838,618, giving the dates of the occur-
rences which you describe. How did you come to
make the experiments leading to this discovery?

A10. In response to an enquiry for a stopping
material for shoe lasts, development work was car-
ried out in the early part of 1919 in the Industrial
Nitrocellulose Laboratory of the New Explosives
Company at Stowmarket. Part of the work of the
Industrial Nitrocellulose Laboratory consisted of
the preparation of special compositions for particu-
lar industrial application and the enquiry in ques-
tion was dealt with in the normal routine of [291]
the laboratory. Work was continued until the end of
1919 when a composition was produced similar to
that described in lines 12 to 27 of the U. S. Patent
1,838,618. Modifications were also prepared within
the limits given in lines 50 to 60 of U. S. Patent
1,838,618.

Q11. By whom were you employed at the time
you made the said invention; and in what capacity?

(Interrogatories for Manfred E. Griffiths—direct.)

A11. Employed by the New Explosives Company Limited in the capacity of Chemist.

Q12. When was the first specimen of the plastic composition such as that described and claimed in your United States patent No. 1,838,618, made up?

A12. A plastic composition the same as that described in lines 12 to 27 of U. S. Patent 1,838,618 was made up at the end of the year 1919.

Q13. State each of the ingredients and the proportions or amounts of each ingredient employed by you in making the first complete and satisfactory specimen of said plastic composition. What procedure was adopted to harden the material?

A13. The first complete and satisfactory specimen of plastic wood was made to the following composition:

- 17 parts by weight of Celluloid Scrap
- 4.5 “ “ “ “ Castor Oil
- 8.5 “ “ “ “ Ester Gum
- 10 “ “ “ “ Industrial Spirit
- 30 “ “ “ “ Benzol
- 30 “ “ “ “ Acetone

77 parts by weight of this solution being mixed with 23 parts by weight of finely ground wood flour. The composition was hardened by exposure to the air.

Q14. After making up said sample, did you or did you not test it to determine its usefulness? What conclusion did you come to as to its usefulness?

A14. The composition was tested and found to possess considerable strength and power of ad-

(Interrogatories for Manfred E. Griffiths—direct.)
hesion. In addition to being [292] tried out as a stopper for shoe lasts it was practically tested for filleting and building up engineers' patterns.

Q15. What was the condition of the said material before drying, and what was its condition and characteristics after drying?

A15. Before drying the composition was a plastic mass, capable of being readily moulded or spread and after drying it showed many of the characteristics of wood.

Q16. Have you any contemporaneous notebooks or laboratory records showing your experiments in the making of this plastic composition? If so, please produce them, and attach to this deposition a photostatic copy of the same.

A16. I have laboratory records showing experiments carried out in the making of plastic compositions known as plastic wood and I now produce and put in as an exhibit photostatic copies of relevant pages.

(The photostatic copies produced by the witness were marked by the Commissioner as plaintiff's Exhibit No. 1, and are forwarded as physical exhibits.)

Q17. Please read from your notebook any records relating to the plastic composition described and claimed in your United States patent No. 1,838,618.

A17. I have extracted the records relating to the plastic composition described in my U. S. Patent

(Interrogatories for Manfred E. Griffiths—direct.)
1,838,618 from my note book, and I now produce the extract and put it in as Exhibit No. 2.

(The extract produced by the witness was marked by the Commissioner as plaintiff's Exhibit No. 2, and is forwarded as a physical exhibit.)

Q18. What are the experiment numbers relating to formulae for the plastic composition described and claimed in said patent?

A18. The numbers relating to the experimental plastic [293] formulae of which we have records are 1663 and 1667, the number 1674 applies to the composition given in lines 12 to 27 of U. S. Patent 1,838,618.

Q19. When were these experiments made? How do you fix the dates when these experiments were made? Read any entries in these or any other records which help you to fix the dates. Attach to this deposition a photostatic copy of any such entries.

A19. The laboratory diary contains the number 1632 under the date 6th of August 1919, so that experiment number 1663 would have been about a month later than experiment number 1632. I put in photostatic copies of the entries in the laboratory diary and note book referred to in my answer to this question.

(The photostatic copies produced by the witness were marked by the Commissioner as plaintiff's Exhibit No. 3, and are forwarded as a physical exhibit.)

Q20. Explain how these entries fix the dates of the experiments to which you refer?

(Interrogatories for Manfred E. Griffiths—direct.)

A20. The number 1932 in the diary for August 6th, 1919 indicates that the number 1663 must have been allocated soon after August the 6th, 1919.

Q21. Did you disclose your said invention to any one at or about the time when you made it? If so, to whom and when?

A21. Mr. Murray and other assistants in the laboratory would be acquainted with the composition, but any information of this kind would be treated as confidential in accordance with Service Agreement. The Service Agreements in operation at the period in question bound employees to keep secret any information obtained during their service with the company.

Q22. Did you at any time disclose your invention to [294] the head office of your employers? If so, produce any writing by which you made said disclosure; and attach a photostatic copy of the same to the deposition. When was this disclosure made?

A22. Particulars of the composition of Plastic Wood must have been sent to the Head Office of the Company about the end of the year 1919. No records are available.

Q23. Have you or your employers ever manufactured or sold any of the plastic composition described and claimed in United States patent No. 1,838,618? If so, since when?

A23. Sales of Plastic Wood commenced in Great Britain in 1920 and have continued ever since.

(Interrogatories for Manfred E. Griffiths—direct.)

Q24. What was the formula of all or most of the plastic compositions manufactured and sold prior to December 9, 1921?

A24. As described in lines 12 to 27 in U. S. Patent 1,838,618.

Q25. Did the plastic composition manufactured prior to Dec. 9, 1921 consist of nitrocellulose in a solution containing a volatile liquid and a finely divided cellulose filler in such proportions as to harden upon mere exposure to air to substantially the rigidity and solidity of wood?

A25. Yes.

Q26. Did you or did you not ever abandon the said invention between the time it was made in 1919 and November 17, 1923; the filing date of your United States patent application?

A26. No.

Q27. Was the formula for your plastic composition described in your United States patent ever published in the United Kingdom prior to November 17, 1923, the filing date of your application for United States letters patent?

A27. No.

Q28. Did you or did you not keep the ingredients, their proportions, and the nature of said plastic composition secret [295] from the public prior to November 17, 1923?

A28. Yes. The composition was kept secret.

Q29. Look at the photostatic copy of the article contained in "Engineering" dated December 9, 1921,

(Interrogatories for Manfred E. Griffiths—direct.) page 785, the paragraph entitled “Plastic Wood” and state what, if anything, you had to do with the contents of said article?

A29. I have read the article entitled “Plastic Wood” contained in “Engineering” dated December 9th, 1921, Page 785, a photostatic copy of which is now produced to me by the Commissioner and identified by me and I say: that the Article was published after a discussion between Mr. Carter, the Works Manager and Chief Engineer of the New Explosives Company and myself as to the scope and type of information to be given in the article.

Q30. Relate briefly the circumstances attending the furnishing of the information for the article.

A30. I have already related the circumstances attending the furnishing of the information for the Article in my answer to Question No. 29, but I may mention that the object of the Article was to secure publicity for Plastic Wood.

Q31. Please place your initials on the copy of the page from “Engineering” you have just identified.

A31. I have initialled the said copy of the page from “Engineering” which I have just identified, as required.

Q32. Look at the photostatic copy of the article contained in “The Engineer” dated March 3, 1922, and entitled “Plastic Wood”, and state what, if anything, you had to do with the contents of said article?

(Interrogatories for Manfred E. Griffiths—direct.)

A32. I have read the Article entitled "Plastic Wood" contained in "The Engineer" dated March 3rd, 1922, a photostatic copy of which is now produced to me by the Commissioner and identified by me, and I say: that I discussed with Mr. Carter the scope and [296] type of information to be given, but I am not sure whether or not the representative of "The Engineer" was present during part of the discussion.

Q33. Relate briefly the circumstances attending the furnishing of the information for the article.

A33. The Article deals chiefly with a general account of the Stowmarket factory, and Mr. Carter either conducted "The Engineer" representatives around the factory or supplied him with the information dealing with the general work of the factory and particulars regarding Plastic Wood.

Q34. Please place your initials on the copy of the page from "The Engineer" you have just identified.

A34. I have initialled the said copy of the page from "The Engineer" which I have just identified, as required.

Q35. Do you know of anything concerning the material in question that may tend to the benefit and advantage of the plaintiff? If so, declare the same fully and at large as if you had been particularly interrogated concerning the same.

A35. No.

Cross Examination

XQ1. If your answer to plaintiff's interrogatory 8 is in the affirmative, give the name and date

(Interrogatories for Manfred E. Griffiths—cross.)
of your British patent and supply a true and correct copy thereof.

A. No British patent has been taken out.

XQ2. Did you, or anyone on your behalf, attempt to secure a patent on your plastic composition in Great Britain?

A. No attempt has been made to secure a patent in Great Britain.

XQ3. If you did attempt to secure a patent on your plastic composition in Great Britain, what was done and what were the results? [297]

A. No attempt was made to secure a patent in Great Britain.

XQ4. If you did not attempt to secure a patent upon your plastic composition in Great Britain, why was no such attempt made?

A. The question of British Patent for Plastic Wood was considered by the Board and the Technical Adviser of the New Explosives Company Limited and it was decided not to take out patent. I have no knowledge of the reason for the Board's decision.

XQ5. If your answer to plaintiff's interrogatory 28 is in the affirmative, what was the object of keeping your plastic composition a secret without attempting to secure a patent thereon in Great Britain?

A. It was the usual practice in the New Explosives Company's laboratory to keep all formulas secret.

(Interrogatories for Manfred E. Griffiths—cross.)

XQ6. If your answer to plaintiff's interrogatory 28 is in the affirmative and you state that you had anything to do with the contents of the article mentioned in plaintiff's interrogatory 29, when did the secrecy of your invention from the public stop?

A. Secrecy has been maintained since Plastic Wood was first made. The Article in "Engineering" gives no details of composition.

XQ7. State the date and circumstances under which the nature of your plastic composition first became known to the public.

A. No knowledge of exact date. It was supplied to the shoe trade for repairing shoe lasts toward the end of 1920, but no information regarding the composition of Plastic Wood was made known until the publication of the U. S. patent.

XQ8. At the time of making the discovery of your plastic composition referred to in plaintiff's interrogatory 10, had you had any previous knowledge of the attempts of others to produce plastic wood; if so, give full information as to what previous [298] knowledge you had had.

A. Shoe lasts repaired with an organic filling material were brought to our notice before we attempted to make Plastic Wood. We were unaware of the composition of this organic filling material, but decided that a product having similar properties could be made with nitrocellulose as a binder and a finely divided cellulose as a filler.

XQ9. In your plastic composition is the presence of a non-drying oil essential to produce the desired

(Interrogatories for Manfred E. Griffiths—cross.)
results or can the non-drying oil be entirely omitted?

A. If the non-drying oil is omitted the properties of the Plastic Wood are altered.

XQ10. In your plastic composition is the presence of resin essential or may the resin be omitted and the desired results be obtained?

A. If the resin is omitted the properties of the Plastic Wood are altered.

XQ11. In your patent specification you refer to celluloid scrap as a source for nitrocellulose; did such celluloid scrap contain camphor? If so, was the presence of camphor objectionable?

A. The cellulous scrap used in the preparation of Plastic Wood contains camphor. The presence of camphor is not objectionable.

XQ12. If any of the ingredients of the plastic composition described in your patent can be omitted and satisfactory results be obtained, state which ingredients can be so omitted.

A. If any of the ingredients of Plastic Wood are omitted the properties are altered.

XQ13. Can the quantities of the ingredients mentioned in your United States Letters Patent be changed from the quantities listed therein and a satisfactory plastic composition be produced [299] which will produce substantially the same results when used for the same purpose? If the quantities can be varied, state within what limits for each ingredient.

(Interrogatories for Manfred E. Griffiths—cross.)

A. The quantities of the ingredients can be varied from the composition given in lines 12 to 27 in the patent and substantially the same results obtained, provided that the proportion of nitrocellulose oil and resin to wood flour is such as to give the final product the requisite strength and the proportion solvent sufficient to ensure a putty-like consistency.

XQ14. Did you ever learn of the practice on aviation fields during the World War of mixing "wing dope"—a composition used for applying coatings to airplane wing surfaces—with finely ground wood to form a repair composition similar to plastic wood? If you did learn of such practice, in what respects did your composition differ from the composition formed in this practice?

A. I have heard of the practice of mixing aeroplane dope and sawdust to form a repair composition, but I had no knowledge of this practice at the time Plastic Wood was invented. I have no knowledge of the properties of the mixture of dope and sawdust.

XQ15. If someone, such as the defendant in this case, should make a composition by treating cellulose with nitric or sulphuric acid with or without the addition of from 10 to 40% of camphor and dissolving the product thus obtained in a solvent such as acetone and mixing with this material sawdust, cork waste, or cork powder, to form a paste, and should use this material as a molding composition, in what

(Interrogatories for Manfred E. Griffiths—cross.) respects would this differ, if any, from the making and using of your plastic composition.

A. The particulars given are not sufficiently explicit to enable an opinion to be formed as to the properties of such a composition. Nitration particulars for the cellulose [300] are inadequate and no proportions or ingredients are given.

XQ16. If someone, such as the defendant in this action, should immerse cotton fibre in nitric acid or a mixture of nitric and sulphur acids, then wash out the acids with water and submit the product of this treatment to the action of ether to fit it for combination with other substances, and then add to this product sawdust, straw, or any vegetable powder or fibre and a quantity of oil and use such composition for statuary and moldings, in what respects, if any, would this differ from the making of your plastic composition and using it for its normal purpose?

A. The particulars given are not sufficient. The nitration particulars are indefinite and no proportions are given.

XQ17. If someone, such as the defendant in this action, should make a composition by mixing a solution of pyroxylin with ground cork and asbestos fibre and other fibre material, in what respects, if any, would such composition differ from your composition?

A. Particulars are insufficient. No information is given regarding the type or strength of the pyroxylin solution and no proportions are given.

(Interrogatories for Manfred E. Griffiths—cross.)

XQ18. If someone, such as the defendant in this action, should make a plastic composition by mixing a solution of pyroxylin with finely divided wood, in what respects, if any, would such composition differ from your composition?

A. The answer is exactly the same as 17.

XQ19. If someone, such as the defendant, should make a composition by mixing 60% nitrocellulose, 20% camphor, and 20% of a chloral ($C_2H Cl_3O$) derivative of castor oil and introduce wood flour and suitable solvent, such as acetone, in what respects, if any, would this composition differ from your plastic composition? [301]

A. Proportions given are not sufficient to enable an opinion to be given without considerable experimentation.

XQ20. If someone, such as the defendant in this case, should make a plastic composition by taking 100 grams of powdered cork, moistening it with alcohol, and a mixture made up of boiled linseed oil (about 5 grams) and a few cubic centimeters of crystallizable acetic acid, then add 20 grams of collodion; the collodion having the following formula; guncotton 5 grams, com ether 75 grams, alcohol 20 grams, boiled linseed oil 2 grams; then thoroughly mix these ingredients, triturate and knead them until the whole of the mass has assumed the form of paste of such consistency as to be kneadable with difficulty, state in what respects, if any, this composition would differ from your composition?

(Interrogatories for Manfred E. Griffiths—cross.)

A. This composition would be much stiffer than Plastic Wood and could not be used in the same manner.

XQ21. If the composition mentioned in the preceding interrogatory were allowed to dry in a mold in a current of air for a number of hours and then subjected to pressure, how would the composition obtained differ from your hardened plastic wood.

A. Considerable experimental work would have to be carried out before this question could be answered.

XQ22. What is the effect of subjecting your plastic composition to heat or pressure during the drying or hardening as compared with your composition when it is allowed to dry or harden in the absence of heat or pressure?

A. If Plastic Wood is subjected to heat during drying, the surface hardens. The solvent vapour cannot escape freely and the mass expands leaving a porous centre. I have not tried the effect of drying under pressure and I cannot say what effect drying under pressure would have on the properties of Plastic Wood. [302]

XQ23. If someone, such as the defendant, should make a plastic composition by taking 100 grams of powdered cork or finely divided wood, mixing it with 20 grams of celluloid in solution in acetone, and adding about 5 grams of boiled linseed oil, in what respects, if any, would the composition thus obtained differ from your composition?

(Interrogatories for Manfred E. Griffiths—cross.)

A. This composition would lack the adhesive properties of Plastic Wood and in the hardened form would be more friable than Plastic Wood.

XQ24. If someone, such as the defendant in this case, should make a composition by making a paste-gum obtained by means of celluloid dissolved in a solvent, such as acetone, with the addition of other substances, such as resins, oils, gums, vegetable, mineral or animal powder, in what respects, if any, would this composition differ from your composition?

A. Proportions are not given and it is impossible to express an opinion as to the properties of such composition.

XQ25. If someone, such as the defendant, should make a composition consisting of equal parts of celluloid or nitro-cellulose with disintegrated or pulverized cork and disintegrated or pulverized india rubber, the whole being mixed together with the addition of a suitable solvent, such as acetone, the latter being added in such quantity that the composition forms a thickly liquid solution, in what respects if any, would this composition differ from your composition?

A. Particulars of proportions are not sufficient to enable the properties of this composition to be accurately judged, but I should expect such a composition to lack the tenacity and adhesive properties of Plastic Wood.

XQ26. If someone, such as the defendant, should make a composition with the following ingredients:

(Interrogatories for Manfred E. Griffiths—cross.)
soluble cellulose 20%, palmoil, castor oil, glycerin, or other suitable oil 5%, [303] phosphate of lime 15%, bone dust, sawdust, or other powdered material 30%, sundry pigments, such as magnesia, baryta, zinc oxide, alumina 15%, gum 5%; in what respects, if any, would this composition differ from your composition? If this composition above mentioned were subjected to heat and pressure, how would the product obtained differ from the product obtained by your composition where the composition is allowed to dry or harden in the absence of heat and pressure?

A. The term "Soluble Cellulose" is too vague to enable an opinion to be expressed on the properties of such a composition. I should expect a mixture of this kind to be much stiffer than plastic wood and unsuitable for use in the same manner as Plastic Wood.

XQ27. If someone, such as the defendant, should take cork, sawdust or chopped cork, which is kneaded, and mix it with nitrocellulose dissolved in acetone, would this solvent be so volatile that operations conducted therewith would have to be performed faster than with your composition so that it would not solidify before the operations were completed?

A. This would depend on the proportions of sawdust or chopped cork to nitrocellulose dissolved in acetone.

XQ28. If someone should make a composition having the following ingredients: 350 parts nitro-

(Interrogatories for Manfred E. Griffiths—cross.)
cellulose containing 100 parts of water, 140 parts of phosphoric acid tri-orthoeresyl-ester, 140 parts of secondary xylidine, that is to say, alkyl or arylxylidine C_6H_3 (CH_3) NRR , 300 parts of cork or sawdust, 100 parts of mineral coloring meal, 50 parts chalk, and these ingredients are kneaded at a temperature of about $75^\circ F.$ in a vacuum until the whole of the water is removed: would this composition be similar to or different from your composition, and if different, in what respects?

A. This composition would be stiffer than Plastic Wood [304] and could not be manipulated in the same way.

XQ29. In your composition, is the function of the castor oil anything other than to fortify the vegetable oil inherently present in the wood filler and to act as a plasticizer for the nitrocellulose? If so, please state any additional functions.

A. The function of the castor oil is to reduce brittleness of the hardened mass, and to help the working properties of the wet material. Castor oil does not act as a plasticizer for the nitrocellulose.

XQ30. In your plastic composition, is the function of the resin any other than to fortify the resin inherently present in the wood filler and to increase the adhesiveness of the composition? If so, please state the additional functions.

A. The resin increases the co-hesiveness of the dry mass and increases the adhesion of the Plastic Wood to other materials.

(Interrogatories for Manfred E. Griffiths—cross.)

XQ31. Prior to November 17, 1921, what uses did you or anyone associated with you make of plastic composition which either embodied the invention in your United States Letters Patent No. 1,838,618 or which led up to the development of this invention?

A. Plastic Wood was used for repairing shoe lasts and for use in making up and repairing engineers' patterns.

XQ32. Prior to November 17, 1921, were any of your plastic compositions embodying or pertaining to the disclosure in your United States Letters Patent No. 1,838,618 sold? If so, give the formula of the composition so sold. Were any of them sold in the United States? If so, when, and to whom?

A. Prior to November 1921 Plastic Wood was sold in Great Britain. The composition of the material sold was the same as that described in U. S. Patent No. 1,838,618, lines 12 to 27. Such information as I have leads me to believe that no Plastic Wood was sold in the United States prior to November 17th, 1921.

XQ33. Prior to November 17, 1921, were any of your [305] plastic composition embodying or pertaining to the invention in your United States Letters Patent No. 1,838,618 publicly used? If so, when, where, and for what purpose? Were any of them used in the United States? If so, when, where, and for what purpose?

A. Prior to November 1921 Plastic Wood of similar composition to that mentioned in lines 12

(Interrogatories for Manfred E. Griffiths—cross.)
to 27 of U. S. Patent No. 1,838,618 was sold and used in Great Britain for repairing shoe lasts and engineers' patterns. I have no knowledge of any Plastic Wood being used in the United States prior to November 17th, 1921.

XQ34. Were any of your plastic compositions containing nitrocellulose dissolved in solvent and mixed with finely divided cellulose material described in any printed publication prior to November 17, 1921. If so, give the names of such publications, their dates of publication, the names and addresses of the publishers, the pages of the publications where such description or mention occurs, and supply, if possible, copies of such pages.

A. Plastic Wood of the composition given in U. S. patent No. 1,838,618 lines 12 to 27 was described in a pamphlet entitled "Necol for the Leather Trade", (Page 11), issued by the New Explosives Company Limited in September 1920. This company was later known as Necol Industrial Colloidions Limited. This pamphlet refers to properties and use of Plastic Wood, but does not disclose the invention as it does not give ingredients or proportions. I have only one copy of this pamphlet available which belongs to Nobel Chemical Finishes Limited but I produce to the Commissioner and put in as an exhibit a photostatic copy of the Preface to the said pamphlet and of the article therein dealing with "Necol" Plastic Wood.

(Interrogatories for Manfred E. Griffiths—cross.)

(The photostatic copy produced by the witness were marked by the Commissioner as Exhibit No. 4, and is forwarded as [306] a physical exhibit.)

XQ35. What was the date of your first introduction of your plastic composition into the United States? State how your invention was first introduced into the United States.

A. I don't know the exact date of the first introduction of Plastic Wood into the United States. I believe it was in September 1923 introduced by C. E. Tennant & Sons.

XQ36. When did you abandon any attempt to secure a British patent on your plastic composition and what was the reason therefor?

A. I cannot answer this question as I have never made an attempt to secure British patent.

XQ37. If there is any difference between the formula stated by you in answer to plaintiff's interrogatory 24 and the composition described in your United States Letters Patent No. 1,838,618, when and why were the changes made?

A. There is no difference, it refers to the same material.

XQ38. In what respects, if any, does the plastic composition described in your United States Letters Patent No. 1,838,618 differ from the composition described on page 785 of the "Engineering" issue of December 9, 1921?

A. The composition in "Engineering" of December 9th, 1921 is the same as the composition described in U. S. patent 1,838,618 lines 12 to 27.

(Interrogatories for Manfred E. Griffiths—cross.)

XQ39. If you had anything to do with the furnishing of information for the article in "Engineering" dated December 9, 1921, page 785, entitled "Plastic Wood", when did you supply this information? Did you give this information with the intention that it be published; if so, when did you expect it to be published?

A. The information for the article on Plastic Wood in [307] "Engineering" December 9th, 1921, was supplied shortly before that day on the understanding that it was to be published immediately.

XQ40. If you gave such information to the "Engineering" or caused it to be given for purposes of publication in the "Engineering", did you not expect the information therein contained to be given freely to the public or readers of "Engineering" (a) without any compensation to you, (b) without any acknowledgment that you were the inventor thereof, (c) without any expectation of securing a monopoly thereon, (d) without any expectation of securing any further remuneration?

A. It was intended that the article in "Engineering" should give information to the public regarding the properties of Plastic Wood. The article does not disclose any particulars of ingredients or proportions which would enable a composition similar to *plaswood* to be prepared, but only a general statement, as to certain ingredients and properties. The question of compensation, acknowledgment or remuneration was not of interest to me as Plastic

(Interrogatories for Manfred E. Griffiths—cross.)
Wood was the property of the New Explosives Company Limited.

XQ41. If you know the date of first publication of the issue of December 9, 1921, of "Engineering", give this date.

A. Not known.

XQ42. In what respects, if any, does the composition described in your United States Letters Patent No. 1,838,618 differ from the disclosure made in "The Engineer" for March 3, 1922, a page of which is attached to plaintiff's interrogatories?

A. The article in the "Engineer" for March 3rd, 1922 does not disclose any particulars of ingredients or proportions which would enable a composition similar to that described in U. S. patent 1,838,618, lines 12 to 27 to be prepared.

XQ43. If there are any differences between your composition as described in your patent and the disclosures made in [308] "The Engineer" and in "Engineering", when and why were the changes made?

A. The disclosures made in "The Engineer" and in "Engineering" refer to the same composition as described in the U. S. patent, but the articles in "The Engineer" and "Engineering" do not give details of ingredients or proportions which would enable a composition similar to Plastic Wood to be made up.

XQ44. Have you or your employers ever manufactured or sold any plastic compositions that could be used for the purposes of plastic wood in the

(Interrogatories for Manfred E. Griffiths—cross.)
United States prior to November 17, 1923. If so, state the formula of such composition, the date or dates of sale, and the name and address of the person or persons to whom the sale was made.

A. I have no knowledge of any sales of a plastic composition in the U. S. prior to November 17, 1917.

XQ45. How many different plastic compositions similar to plastic wood did you make between 1919 and November 1923? Give the formula of each of such compositions.

A. There are eleven different plastic compositions similar to Plastic Wood made by New Explosives Company Limited between 1919 and November 1923, the formulas are contained in a list which I now produce to the Commissioner and put in as an exhibit. The eleven compositions contained in the said list were prepared and tried out for various purposes during the period mentioned.

(The list produced by the witness was marked by the Commissioner as Exhibit No. 5, and is forwarded as a physical exhibit.)

XQ46. Which of these compositions did you abandon? Why did you abandon it or them? Were the formulae of any of these compositions published prior to November 17, 1923? If so, give the date of the publication, the name of the publication, [309] the pages thereof, the name and address of the publishers, and the pages of the publication where the formula appears.

A. None of the compositions mentioned in 45 were put into practical use. None of the formulae of

(Interrogatories for Manfred E. Griffiths—cross.) these compositions were published. They were not definitely abandoned but were kept in reserve for use should occasion require.

XQ47. When did you first learn that a United States patent might be obtained upon your invention?

A. I am not aware of the date when the question of a U. S. patent was first considered.

XQ48. Prior to learning that a United States patent might be obtained upon your invention, had you not abandoned the invention to the public of Great Britain? If not, why did you not attempt to secure a British patent upon it?

A. No. The Company's policy was to keep the invention secret as far as Great Britain was concerned.

XQ49. State the circumstances under which you were induced to obtain a United States patent although no British patent was obtained upon your invention.

A. The U. S. patent was obtained at the request of Messrs. C. Tennant & Sons of New York.

XQ50. What effect does the application of heat and pressure have upon your composition while drying and hardening?

A. I have not carried out experiments on the effect of heat and pressure on plastic wood whilst drying and hardening. Heat alone causes the plastic wood to dry on the surface and prevents the escape of solvent vapour, thus producing cavities in the centre of the mass.

(Interrogatories for Manfred E. Griffiths—cross.)

XQ51. In the course of the prosecution of your application before the United States Patent Office Gustavus J. Esselen executed an affidavit on the 14th day of January, 1931, including the following statement: [310]

“Furthermore, it would be obvious to anyone familiar with these matters that using only such amounts of gum and oil as naturally occur in wood flour would tend to give the product slightly less toughness and less adhesion than one in which these components were reinforced with added gum and oil, but one which in all essential properties would be fundamentally the same.”

Do you agree with this statement? If not, why not?

A. I agree with Mr. Esselen's statement.

XQ52. Prior to November 17, 1922, what other fillers had you used, if any, besides wood flour, in your composition? Which of these other fillers produced satisfactory results?

A. A variety of fillers were tried out on plastic wood. We have records of the following: leather dust, starch, plaster of paris, kaolin, but none of these fillers produced results for general purposes equal to wood flour.

XQ53. Do you know of anything concerning the material in question that may tend to the benefit and advantage of the defendant and intervener? If so, declare the same fully at large as if you had been particularly interrogated concerning the same.

A. No.

Interrogatories for
ERNEST CAIZLEY MURRAY

Q1. Please state your name, age, residence and occupation.

A. Ernest Caizley Murray, age 39, address 115 Western Road, Leigh-on-Sea, service representative.

Q2. By whom are you now employed and in what capacity?

A. Nobel Chemical Finishes Limited, Slough, servicing motor car manufacturers. [311]

Q3. How long have you been employed by Nobel Chemical Finishes Ltd., and its predecessors? During what years?

A. 25 years, 1910-1935.

Q4. Are you acquainted with Manfred E. Griffiths? How did you come to know him? How long have you known him?

A. Yes. Responsible for original engagement, 25 years.

Q5. Have you any knowledge of any experiments Mr. Griffiths made relating to a plastic composition known as Plastic Wood? If so, please state your knowledge of Mr. Griffiths' experiments in making this composition, giving the dates of the occurrences which you describe.

A. Yes. Responsible for making small laboratory trials in 1919.

Q6. Did Mr. Griffiths ever disclose to you the formula of the plastic composition known as Plastic Wood, above referred to? If so, please relate the circumstances of the disclosure and its approximate

(Interrogatories for Ernest Caizley Murray—
direct.)

date. Describe the nature of this material before
drying in the air and after.

A. Yes. Under the circumstances related in an-
swer 5. Plastic mass before drying, after drying
having the appearance of hard wood.

Q7. Look at the copy of the Griffiths United
States patent No. 1,838,618 for plastic composition
and state whether or not the plastic composition de-
scribed therein is the same as that of which you
have knowledge of Mr. Griffiths' making at the times
you have referred to.

A. I have read the copy of the Griffiths United
States patent No. 1,838,618 for plastic composition,
and I say: The plastic composition made by Mr.
Griffiths is the same as described in this patent.

Q8. Have you any records relating to the making
of the plastic composition described in Mr. Griffiths'
United [312] States patent No. 1,838,618? If so,
please produce them, explain what they are, and at-
tach a photostatic copy of them to your deposition.

A. No. I have not.

Q9. Have you ever seen before the laboratory
records produced by Mr. Griffiths, describing experi-
ments made relating to the plastic composition in
question? If so, when and relate the circumstances
of your acquaintance with these records.

A. Yes. Through making small laboratory trials
in conjunction with Mr. Griffiths.

Q10. Has Mr. Griffiths or his employers manu-
factured any plastic composition such as that de-

(Interrogatories for Ernest Caizley Murray — direct.)

scribed and claimed in Mr. Griffiths' United States patent No. 1,838,618? Prior to December 9, 1921?

A. Yes.

Q11. Have you any knowledge whether or not Mr. Griffiths ever abandoned his invention for the plastic composition between the time it was made and November 17, 1923, the filing date of his application for United States letters patent? If so, state what that knowledge is.

A. I have no knowledge.

Q12. Do you know of anything concerning the material in question that may tend to the benefit and advantage of the plaintiff? If so, declare the same fully and at large as if you had been particularly interrogated concerning the same.

A. No.

Cross Examination

XQ1. If the answer to plaintiff's interrogatory 6 is to the effect that Mr. Griffiths did disclose to you the formula of the plastic composition known as "Plastic Wood", how many formulae did he disclose to you? Give the formulae that he [313] disclosed to you and the dates on which they were disclosed.

A. At least three. Two of the formulas are contained in Mr. Griffiths' records, a photostat copy of which is put in as Exhibit No. 1.

XQ2. What was the purpose of Mr. Griffiths disclosing the formulas?

(Interrogatories for Ernest Caizley Murray—cross.)

A. To enable me to make laboratory trials.

XQ3. Did Mr. Griffiths, Nobel Chemical Finishes Ltd., or any of its predecessors, undertake to manufacture Plastic Wood or any of the formulas that Mr. Griffiths disclosed to you? If so, state the date on which such formula or formulas were first manufactured and designate which formula was manufactured. Also, state when, where, and by whom such formula or formulas were first used for a commercial purpose either by sale or by use.

A. Down to the first part of the question, yes. End of 1919 is the date of first manufacture. Formula No. 1663 in Mr. Griffiths' records was the first one manufactured. I cannot answer the last part of the question.

XQ4. Do you have any knowledge or any means of ascertaining whether or not any of Mr. Griffiths' formulas or Plastic Wood was sent to the United States? If so, give the date of the first introduction and names and addresses of the person or persons to whom it was sent.

A. No.

XQ5. In the Griffiths United States Patent No. 1,838,618 which you are asked to look at in plaintiff's interrogatory 7, there are a number of different compositions; state which of these Mr. Griffiths disclosed to you and the date or dates of the disclosure.

A. Those appearing on lines 50 to 55 of United States Patent No. 1,838,618 about the end of 1919.

(Interrogatories for Ernest Caizley Murray—cross.)

XQ6. Did Nobel Chemical Finishes Ltd. or any of its associates or predecessors manufacture any compositions that could be used for the purposes of Plastic Wood? If so, give the formula thereof and the date of first manufacture, also the date of first sale.

A. Yes. Formula No. 1663 of Mr. Griffiths' records. First manufactured end of 1919. I do not know the date of first sale but from printed matter I have seen I believe it to be September, 1920.

XQ7. If, in answer to plaintiff's interrogatory 8, you have any records relating to the making of the plastic composition described in Mr. Griffiths' United States Patent, do you know whether or not others had knowledge of these records or similar records? If so, state the names and addresses of such others and explain what publicity was given to them.

A. Yes. Other people working in the laboratory had knowledge of similar records. I cannot now give their names and addresses. So far as I know no further publicity was given to those records.

XQ8. Was Mr. Griffiths the inventor of all of the plastic compositions disclosed in his patent? If you have any knowledge to the contrary, state fully such knowledge.

A. Yes. I have no knowledge to the contrary.

XQ9. If your answer to plaintiff's interrogatory 10 is in the affirmative, state the formula of the plastic composition that was manufactured prior to December 9, 1921. Were any plastic compositions

(Interrogatories for Ernest Caizley Murray—cross.)
suitable for use as Plastic Wood manufactured and sold by Mr. Griffiths or his employers prior to November 17, 1921. If so, give the formula thereof and the date or dates of sale, and the names and addresses of the persons to whom sold.

A. That again will be Formula No. 1663 of Mr. Griffiths' records. Both manufactured and sold as far as my knowledge goes. Again Formula No. 1663 of Mr. Griffiths' records. September, 1920, [315] is the first date of sale I have any information of. I cannot give the names and addresses of the persons to whom sold.

XQ10. Do you know why Mr. Griffiths did not obtain a British patent upon his alleged invention for Plastic Wood? If so, state fully the reasons therefor. Do you know whether or not it was Mr. Griffiths' invention to disclose his invention to the public of Great Britain without attempting to secure a British monopoly thereon? If so, please state fully your knowledge.

A. No I do not know why.

XQ11. Do you know of anything concerning the material in question that may tend to the benefit and advantage of the defendant and intervener? If so, declare the same fully at large as if you had been particularly interrogated concerning the same.

A. No I do not. [316]

It Is Hereby Stipulated that the above and foregoing Statement of Evidence is a true and complete

statement of the evidence adduced on the trial of the above-entitled action.

CLINTON L. MATHIS

One of the Attorneys for
Plaintiff-Appellee

G. E. STEINER

One of Attorneys for Defend-
ant and Intervener-Appellants

The foregoing Statement of the Evidence pages 1 to 212, inclusive and 2a, 55a & 72a is hereby approved and settled as a true and complete statement of the material evidence adduced on the trial of the above-entitled action, with the exception of the exhibits by written orders dated June 11th, 1938 and June 16th, 1938 directed to be sent by the Clerk of this Court to the Clerk of the Circuit Court of Appeals.

The Certificate of this Court approving the condensed Statement of Evidence, made June 11th, 1938 is hereby vacated and cancelled and the Clerk of this Court is directed to note on the margin of said certificate dated June 11th, 1938 this order of cancellation.

Dated at Tacoma, Washington, this 17th day of June, 1938.

EDWARD E. CUSHMAN

United States District Judge. [317]

It Is Hereby Stipulated that the above and foregoing Statement of Evidence is a true and complete

statement of the evidence adduced on the trial of the above-entitled action.

CLINTON L. MATHIS

One of Attorneys for
Plaintiff-Appellee

G. E. STEINER

One of Attorneys for Defend-
ant Intervener-Appellants

This certificate vacated and cancelled. See Order following ctf, next page above page 213. Edgar M. Lakin, Clerk. June 17, 1938.

The foregoing Statement of the evidence is hereby approved and settled as a true and complete statement of the material evidence adduced on the trial of the above entitled action, with the exception of the physical and documentary exhibits this day by written order directed to be sent by the clerk to the clerk of the Circuit Court of Appeals.

Dated at Tacoma, this 11th day of June, 1938.

EDWARD E. CUSHMAN

United States District Judge

[Endorsed]: Lodged 6/7/38.

[Endorsed]: Filed June 11, 1938. [318]

[Title of District Court and Cause.]

ORDER TRANSMITTING DOCUMENTARY
AND PHYSICAL EXHIBITS TO CIR-
CUIT COURT OF APPEALS.

On stipulation of the parties, It Is Hereby
Ordered, Adjudged and Decreed:

That the following documentary exhibits shall be
forwarded by the Clerk of this Court, at the time
he certifies the record in this appeal, to the Clerk of
the Circuit Court of Appeals for the Ninth Circuit,
for the perparation of copies thereof for the book of
exhibits and to be then returned to the Clerk of
this Court:

Plaintiff's Exhibits

- 1 (Soule testimony)
- 48
- 51
- 52
- 53
- 54
- 1 to 5, inclusive (Griffiths Deposition)
- 55
- 56

Defendant's Exhibits

- A1-A4, inclusive
- A6-A28, inclusive
- A30

And It Is Further Ordered, Adjudged and De-
creed: That the following physical exhibits shall be
forwarded by the Clerk of this Court, at the time he

certifies the record in this appeal, to the Clerk of the Circuit Court of Appeals for the Ninth Circuit:

Plaintiff's Exhibits:

- 2-5, inclusive (Soule testimony)
- 6-25, inclusive
- 28, 35, inclusive
- 37-43, inclusive
- 45
- 47
- 58

Defendant's Exhibits

- A5
- A32-A68, inclusive [319]

Signed at Tacoma, Washington, this 11th day of June, 1938.

EDWARD E. CUSHMAN

United States District Judge

Approved:

CLINTON L. MATHIS

one of attys for plaintiff

G. E. STEINER

one of the attys for Deft & Intervener.

[Endorsed]: Filed Jun. 11, 1938. [320]

[Title of District Court and Cause.]

ORDER TRANSMITTING ADDITIONAL PHYSICAL EXHIBITS TO CIRCUIT COURT OF APPEALS.

On stipulation of the parties, It Is Hereby Ordered, Adjudged and Decreed:

That the following additional physical exhibits shall be forwarded by the Clerk of this Court, at the time he certifies the record in this appeal, to the Clerk of the Circuit Court of Appeals for the Ninth Circuit:

Plaintiff's Exhibits:

46

49

50

Signed at Tacoma, Washington, this 16th day of June, 1938.

EDWARD E. CUSHMAN

United States District Judge.

Approved:

CLINTON L. MATHIS

One of the attorneys for Plaintiff.

G. E. STEINER

One of the attorneys for defendant
and Intervenor.

[Endorsed]: Filed Jun. 16, 1938. [321]

[Title of District Court and Cause.]

STIPULATION REGARDING TRANSCRIPT
OF RECORD ON APPEAL

The above-named defendant and intervener having taken an appeal in this cause to the United States Circuit Court of Appeals for the Ninth Circuit from the Inerlocutory Decree entered herein, and it now being the desire of the parties to agree on the contents of and settle the record on said appeal,

It is hereby stipulated at the request of the defendant and intervener, subject to the approval of the Court, that the Clerk of the District Court shall, upon approval of this stipulation by the Court, prepare a transcript of record for use on appeal which shall include a true and correct copy of the attached pleadings, papers, documents, orders, and proceedings entered and on file in the above-entitled cause comprising:

1. Bill of Complaint (by the A. S. Boyle Co.)
2. Answer of the Pacific Marine Supply Company (defendant).
3. Amendment to Answer of Defendant.
4. Petition for Leave to Intervene (of Webb Products Co., Inc.) excluding attached exhibits A to F inc.
5. Order Relative Petition of Webb Products Co., Inc. for Leave to Intervene.
6. Answer of Intervener (Webb Products Co. Inc.) [322]
7. Amendment to Answer of Intervener.

8. Motion for Order Requiring Intervener to Answer Interrogatories and Furnish Further and Better Particulars.

9. Order on Plaintiff's Motion Requiring Intervener to Answer Interrogatories and to Furnish Further and Better Particulars.

10. Interrogatories to Defendant Under Equity Rule 58.

11. Answers to Interrogatories by Intervener.

12. Particulars of Intervener.

13. Particulars of Defendant.

14. Answers to Interrogatories (by defendant).

15. Order for Issuance of Commission.

16. Commission to Take Testimony.

17. Memorandum Decision After Trial (filed Sept. 25, 1937).

18. Order Denying Petition for Rehearing.

19. Exceptions of Defendant and Intervener and Order Allowing Same (relative denying petitions for rehearing).

20. Amended Proposed Findings of Fact of the A. S. Boyle Co.

21. Proposed Conclusions of Law of the A. S. Boyle Co.

22. Defendant's and Intervener's Proposed Findings of Fact and Conclusions of Law.

23. Order (denying defendant's and intervener's proposed findings of fact with the exception of findings 13 and 18-a, and denying defendant's and internever's proposed con- [323] clusion of law No. 20.)

24. Exceptions of Defendant and Intervener (relative denying defendant's and intervener's proposed findings of fact and proposed conclusion of law No. 20) and Order Noting Exceptions and Allowing Same.

25. Amended Interlocutory Decree.

26. Exceptions of Defendant and Intervener (relative allowance of proposed findings of fact of plaintiff and proposed conclusions of law of plaintiff and entrance of amended interlocutory decree), and Order Noting Exceptions and Allowing Same.

27. Petition for Appeal.

28. Assignment of Errors.

29. Order Allowing Appeal with Supersedeas.

30. Citation on Appeal.

31. Bond (for supersedeas, stay of execution for costs in the district court, costs in Circuit Court of Appeals, and stay of proceedings in the district court pending appeal).

32. Statement of Testimony in Narrative Form.

33. This Stipulation.

34. Clerk's Certificate Under Seal Stating in Detail the Cost of Certifying the Record and When the Record Is Printed Agreeable to Court Rule and/or the Act of February 13, 1911, a Detailed Statement of the Cost Thereof and by Whom Paid.

35. The Names and Addresses of Attorneys Parties to This Appeal Are: George P. Dike, Esq. of Dike, Calver and Gray, 350 Tremont Building, Boston, Massachusetts, G. Wright [324] Arnold, Esq., Clinton L. Mathis, Esq., Smith Tower, Seattle,

Washington, Representing the Plaintiff-Respondent; Fred H. Miller, Esq., 706 Central Building, Los Angeles, California, and G. E. Steiner, Esq., 304 Spring Street, Seattle, Washington, Representing the Defendant and Intervener Who Are the Appellants.

That all of the above, together with the Book of Exhibits and physical exhibits hereinafter mentioned shall constitute the transcript of record of said cause on appeal upon which record said appeal shall be heard and determined (except insofar as the immediately foregoing language may be qualified by the second paragraph of Equity Rule 76), and that said transcript shall be printed under the supervision of the Clerk of the Circuit Court of Appeals and in accordance with the rules of that Court and this stipulation.

In printing said transcript, after the title of the Court and Cause preceding the Bill of Complaint herein the title on subsequent papers need not be printed but in lieu thereof "Title of Court and Cause" may be substituted.

It is further stipulated that at the top of each page of the record on which the testimony of a witness is given that the name of the witness testifying shall be set forth and whether it is direct examination, cross examination, redirect examination, or re-cross examination.

36. At the request of Defendant and Intervener who are appellants, the appellants may embody copies of the documentary exhibits in an indexed

book of exhibits and as the appellee has requested that fifteen (15) copies of the Bk. of Exhibits be prepared over appellants' objection that seven (7) copies should suffice, it is stipulated that fifteen copies of the Bk. of Exhibits shall be prepared, two of which shall be served with [325] the copies of the record on the appellee, two of which are to be retained by the appellants, and the remaining eleven to be filed with the Clerk of the United States Circuit Court of Appeals to accompany the record on appeal; said Bk. of Exhibits shall contain copies of the following documentary exhibits introduced during the trial of said cause;

Plaintiff's Exhibits

- 1 (Soule testimony)
- 26
- 48
- 51
- 52
- 53
- 54
- 1 to 5 inclusive (Griffiths deposition)
- 55
- 56

Defendant's Exhibits

- A1-A4, inclusive
- A6-A28, inclusive
- A30

That the following exhibits shall be treated as physical exhibits and shall be forwarded by the Clerk of the District Court to the Clerk of the

United States Circuit Court of Appeals for the Ninth Circuit for use on argument and in the determination of the appeal:

Plaintiff's Exhibits

- 2-5, inclusive, Soule Testimony
- 6-25, inclusive
- 28-35, inclusive
- 37-43, inclusive
- 45
- 47
- 57
- 58

Defendant's Exhibits

A5

A32-A68, inclusive. [326]

It is further stipulated that the foregoing physical exhibits shall be forwarded by the Clerk at the time he certifies the record in this appeal and that all of the documentary original exhibits may be released and transmitted to whoever undertakes to print the record upon his leaving a proper receipt therefor to enable his preparing copies thereof, either photostatic or otherwise, to be incorporated in the Bk. of Exhibits.

37. If at time of hearing of said appeal any errors appear in this record, resort may be had to the original transcript of the record or to original papers filed in the Clerk's office for purposes of correction.

On printing the record on appeal in this cause the acknowledgment of service in all matters and docu-

ments appearing on the various papers or filed in this cause need not be incorporated in the record but only the Clerk's filing stamp on each paper shall be printed.

38. With respect to the Book of Exhibits mentioned in this stipulation the only marks that need be applied to the individual copies of the exhibits incorporated therein are:

1. The Clerk's filing stamp; and
2. The number of exhibits.

The said Book of Exhibits may be printed separately from but as a part of the Narrative Statement subject to correction for omissions and errors as provided in Equity Rule 76.

39. This stipulation shall be incorporated in the record on appeal and a copy of the same shall be printed in the Book of Exhibits.

40. Order transmitting Documentary and Physical exhibits to Circuit Court of Appeals and order transmitting additional physical exhibits. [327]

Dated: this 7th day of June, 1938.

GEORGE P. DIKE

G. WRIGHT ARNOLD

CLINTON L. MATHIS

By CLINTON L. MATHIS

Attorneys for Plaintiff-Appellee

FRED H. MILLER

G. E. STEINER

By G. E. STEINER

Attorneys for Defendant-Appellant

The foregoing stipulation is hereby approved this 7th day of June, 1938, and it is so ordered.

.....
United States District Judge

[Endorsed]: Filed Jun. 11, 1938. [328]

[Title of District Court and Cause.]

CERTIFICATE OF CLERK U. S. DISTRICT
COURT TO TRANSCRIPT OF RECORD
ON APPEAL.

I, Edgar M. Lakin, Clerk of the United States District Court for the Western District of Washington, do hereby certify that the foregoing typewritten transcript of record, consisting of pages numbered from 1 to 328, inclusive, is a full, true and complete copy of so much of the record, papers and other proceedings in the above and foregoing entitled cause as is required by Stipulation of counsel filed and shown herein, as the same remain of record and on file in the office of the Clerk of the said District Court at Seattle, and that the same constitute the record on appeal herein from that certain Amended Interlocutory Decree of said United States District Court for the Western District of Washington filed and entered February 1, 1938, to the United States Circuit Court of Appeals for the Ninth Circuit.

I further certify that the following is a true and correct statement of all expenses, costs, fees and charges incurred in my office by or on behalf of the

appellants for making record, certificate or return to the United States Circuit Court of Appeals for the Ninth Circuit, to wit: [329]

Clerk's fees (Act Feb. 11, 1925) for making record, certificate or return, 863 folios at 15¢	\$129.45
Appeal fee (Sec. 5 of Act).....	5.00
Certificate of Clerk to Transcript.....	.50
Certificate of Clerk to Original Exhibits.....	.50
<hr/>	
Total.....	\$135.45

I hereby certify that the above cost for preparing and certifying record, amounting to \$135.45, has been paid to me by the solicitors for the Appellants.

I further certify that I attach hereto and transmit herewith the original citation on appeal issued in this cause.

Witness my hand and official seal, at Seattle, in said District aforesaid, this 21st day of June, 1938.

[Seal] EDGAR M. LAKIN,

Clerk of the United States District Court for the Western District of Washington.

By TRUMAN EGGER

Deputy. [330]

In the United States Circuit Court of Appeals
in and for the Ninth Circuit

THE PACIFIC MARINE SUPPLY CO.,
Defendant-Appellant,

WEBB PRODUCTS CO., INC.,
Intervener,

vs.

THE A. S. BOYLE COMPANY,
Plaintiff-Appellee.

CITATION ON APPEAL

The President of the United States of America to
The A. S. Boyle Company, Greeting:

You Are Hereby Cited and Admonished to be and appear in the United States Circuit Court of Appeals for the Ninth Circuit in the City of San Francisco, State of California, within thirty (30) days from and after the date this citation bears, pursuant to an Order allowing appeal filed in the Clerk's office of the District Court of the United States for the Western District of Washington, Northern Division, wherein you are plaintiff and The Pacific Marine Supply Company is defendant and Webb Products Co., Inc. is intervener, to show cause, if any there be, why the Interlocutory Decree rendered against the said appellants should not be corrected and reversed, and the order denying the findings of fact and conclusions of law of the defendant and intervener should not be reversed, and

why speedy justice should not be done to [331] the parties in that behalf.

Witness the Honorable Edward E. Cushman, Judge of the District Court of the United States for the Western District of Washington, Northern Division, this 7th day of Feb., 1938.

[Seal]

EDWARD E. CUSHMAN

U. S. District Judge. [332]

[Endorsed]: No. 8876. United States Circuit Court of Appeals for the Ninth Circuit. The Pacific Marine Supply Company and Webb Products Co., Inc., Appellants, vs. The A. S. Boyle Company, Appellee. Transcript of Record. Upon Appeal from the District Court of the United States for the Western District of Washington, Northern Division.

Filed June 23, 1938.

PAUL P. O'BRIEN,

Clerk of the United States Circuit Court of Appeals
for the Ninth Circuit.

